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THE CHEMIST AND DRUGGIST

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THE CHEMISTS' AND DRUGGISTS' DIARY, 1909."

THIS popular Annual is already in course of preparation, and firms who desire business announcements to appear in it will facilitate the large amount of work in hand by intimating to the Publisher as early as possible the amount of space they desire to be allocated to them. The permanent character of the *Diary*, which is the desk companion of subscribers to THE CHEMIST AND DRUGGIST during the whole of the year, makes it a particularly effective medium for publicity, while the original, unique, and useful "Buyers' Guide" which it contains creates business daily for *Diary* advertisers. The issue for 1909 marks the forty-first year of publication, and will, it is hoped, excel its predecessors in practical utility. Full particulars as regards terms can be obtained from the Publisher, 42 Cannon Street, London, E.C.

EVERY BOOK A BUSINESS HELP.

THAT is one of the virtues of the *C. & D.* series of practical and useful money-making and money-saving books. The old editions are old friends; but the new editions bring new business, because they contain new ideas. They are:

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"THE CHEMIST OPTICIAN" is much appreciated by those who go in for optics. This book is a survey of the theory and practice of visual optics, especially with reference to the sight-testing and spectacle-fitting. It gives exact details of how to carry on this lucrative side-line. Price 4*s.*; by post, 4*s.* 3*d.*

"PHARMACEUTICAL FORMULAS," of which a new edition has just been published (10*s.*, office of THE CHEMIST AND DRUGGIST), contains, says the "Journal de Pharmacie et de Chimie," "useful and varied information. Unlike formularies published in France, this contains, in addition to formulas for galenical and chemical preparations, recipes for use in industry, perfumery, agriculture, and even cookery recipes." [For "cookery" read "culinary." The book is certainly comprehensive, but it does not tell how to scramble eggs.]

Summary.

The subjoined paragraphs give the gist of the more important matters in this issue, with the object of showing at a glance what has happened during the week. See also "Contents" in the first column.

THIS NUMBER is mainly occupied by a report of the proceedings of the British Pharmaceutical Conference held this week at Aberdeen.

OUR REPORT is a complete account of what took place from the reception on Monday evening to the all-day excursion on Thursday.

THOSE WHO WISH to follow the doings of the Conference are recommended to begin on p. 448 where an abstract of the proceedings commences. The short paragraphs which give the pith of the papers are on p. 449.

THE REPORT proper begins on p. 452 with an account of the brilliant reception of Monday evening. The business meetings began on Tuesday (p. 453), the earlier part of the sitting being taken up with the speeches of welcome of the civic and University authorities.

THE PRESIDENT'S ADDRESS followed (p. 457) and occupies ten pages. After the President had been thanked for his excellent address the reports of the Executive and Treasurer were taken (p. 467). The list of delegates was next read (p. 468), and then the meeting settled down to the reading and discussion of papers (p. 468).

WEDNESDAY'S PROCEEDINGS begin on p. 473, and the closing speeches, during which an invitation was accepted to Newcastle, on p. 485.

OTHER CONFERENCE matters are the list of those who were there (p. 456) and notes on the social events (p. 487).

A REPORT of the annual exhibition of the Royal Photographic Society is given on p. 443.

THE FOLLOWING chemists' association meetings are reported on p. 441: Bournemouth, Grimsby, Isle of Thanet, and Hull

UNDER the recoupment system of the Local Government Board for Ireland 9,178 samples of drugs were analysed, 4,449 being galenicals (p. 440).

MR. SAMUEL GIBSON, J.P., was last week the recipient of an illuminated address from the members of the Chemists' and Druggists' Society of Ireland (p. 440).

AT AN INQUEST held at Bournemouth this week it transpired that deceased had been given eight times the dose of medinal that was intended by the doctor (p. 443).

MR. T. H. W. IDRIS, M.P., tells us that an endeavour will be made to make more definite the amendments which were inserted in the Poisons and Pharmacy Bill during its passage through the Lords (p. 438).

THE NEW FRENCH CODEX is the subject of observations by "Xrayser." He refers to the conservative character of the Codex. Other reflections deal with the overcrowded autumn session of Parliament and the physiological section of the British Association (p. 447).

MARKET changes in chemicals and drugs include an advance in quicksilver, English peppermint oil, chillies, coconut and palm oils. Citric acid is firmer in consequence of the new Sicilian tax on citrate and juice. Canada balsam, carnauba wax, Jamaica ginger, taraxacum, H.G.H. peppermint oil, ammonia sulphate, and turpentine are all more or less cheaper (p. 488).

English News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Brevities.

The chemists of Broadstairs have decided to close their establishments during the winter months at 2 P.M. each Thursday.

At the luncheon following the annual meeting of the Sheep-dog Trials Association for Hope valley and district, on September 9, Mr. J. M. Furness, J.P., chemist and druggist, Sheffield, proposed the toast of "The Committee and Officers."

The new Commission on Sleeping Sickness, under the command of Colonel Sir David Bruce, will leave for Uganda in a few days. The headquarters of the work will be selected two miles from the lake shore, in a wild and depopulated region in the province of Chagwe.

The Association of Women Pharmacists is to hold its fourth annual meeting in the Lecture Theatre of 17 Bloomsbury Square, London, W.C., on October 1. Mr. James Cantlie, M.B., F.R.C.S., is to give an address on "Some Tropical Diseases and their Treatment."

The Committee of the Plymouth, Devonport, and Stonehouse Chemists' Association, junior section, has arranged a dispensing competition for prizes, to take place on October 7. Mr. H Andrews, 79 Mutley Plain, Plymouth, should be communicated with by those students who desire to compete.

Robert Schubert and Woolf Samljau were at the Thames Police Court on September 10 fined 100*l.* each, or six months' imprisonment, for harbouring 33¾ lb. of saccharin. Mr. Cluer, the Magistrate, said he could not understand how such a large quantity of saccharin could have escaped the notice of the Customs officers.

The Sudbury Board of Guardians on September 10 received a letter from Mr. W. S. H. Brampton, chemist and druggist, Sudbury, stating that on several occasions inmates of the workhouse had come to him to have teeth extracted, and, having no contract or appointment with the Board, he had rendered an account. The matter was referred to a committee.

The United Indigo and Chemical Co., Ltd., have at the present time under consideration several patents, which are at present manufactured abroad, with a view to working them in this country. Great care, however, is being exercised in order to avoid litigation, and the company only take over patents with an indemnity against litigation over patent rights.

The annual Conference of the Association of Chambers of Commerce was opened at Cardiff on September 15. Lord Brassey delivered the presidential address. Discussions took place on flat and measured telephone rates, bankruptcy law amendment, compulsory registration of firms, foreign parcel-post rates, and lower cable rates. In regard to bankruptcy law the Conference are asking the Government to proceed with an amending Bill as recommended by the Departmental Committee on Bankruptcy Law Amendment.

Poisons and Pharmacy Bill.

Mr. T. H. W. Idris, M.P., was one of the sixty or so members of Parliament who left London on Monday to attend the meetings of the inter-Parliamentary Union at Berlin. A day or two before his departure the hon. member stated, in regard to the Poisons and Pharmacy Bill, which is to be introduced in the House of Commons in the course of the autumn Session, that an endeavour would be made to see that the amendments which have already been inserted during the passage of the Bill through the Upper House were more definite in character. The Bill, as has already been announced in these columns, will be in charge of Mr. Herbert Samuel, M.P., the Under-Secretary at the Home Office, who successfully piloted the Children's Bill through Grand Committee during the first portion of the Session.

Transference of the Excise.

At the annual meeting of the National Association of Assessors and Collectors of Government Taxes, held on September 12, at Derby, the President (Mr. J. F. Kelly) was re-elected. In his annual address he referred to the suggested new Inland Revenue department, and said that the contemplated early transference of the Excise to the Customs was one of the wise and statesmanlike acts of the Chancellor of the Exchequer, who was well equipped for dealing with a large question of organisation and administration. The Customs and Excise, being one machine, should never have been divided into two.

Analysts' Appointments.

Mr. Elborne has been appointed to succeed the late Mr. James Baynes as public analyst for the borough of Peterborough.

Boston Town Council have appointed Professor W. R. Smith as public analyst, in succession to the late Mr. James Baynes, at a retaining fee of 10*l.* 10*s.* per annum and 10*s.* 6*d.* per sample analysed.

Analysts' Reports.

The public analyst of Poplar reports having examined one sample each of glycerin, mustard, and arrowroot, and finding them genuine.

The annual report of the public analyst for Bedfordshire shows that during the twelve months the following samples were examined: arrowroot 10, beeswax 1, carbonate of soda 4, calf's-foot jelly 1, citrate of magnesia 1, cream of tartar 5, Epsom salt 1, lemonade-powder 1, linseed-meal 1, liquorice-powder 1, mustard 11, pepper 19, senna 1, sulphur 1, tincture of rhubarb 1, and vinegar 1. All were genuine with the exception of two samples of cream of tartar, which contained a trace of lead, and one sample of mustard, which contained 15 per cent. of starch.

Disinfection in Middlesex.

The medical officer of health for Middlesex (Dr. C. W. F. Young), in his annual report, gives a return of the methods of disinfection in use by the various local authorities. These include the employment of formalin spray, sulphur dioxide, and steam either combined or separately. In the case of the Ruislip district a 5 per cent. solution of lysoform is used as a spray before employing formalin, and at Hendon the floors of the infected rooms are washed with pynozone, but as a rule a steam disinfector is the principal apparatus used by local bodies.

Contracts.

Depwade Board of Guardians.—Mr. Churchyard, Harleston, trusses etc.

Swaffham Board of Guardians.—Mr. F. W. Cooper, Swaffham, disinfectants.

Ramsbottom Urban Council.—Killgerm Co., Ltd., Cleckheaton, for disinfectants.

Brentford District Council Hospital.—Mr. Humble for chemicals, including antitoxin.

Sudbury Board of Guardians have accepted the tender of Mr. W. S. H. Brampton for drugs.

Cranbrook (Kent) Board of Guardians have accepted the tender of Mr. A. W. Hudson, chemist and druggist, Cranbrook, for medical appliances.

The Rollesby Board of Guardians have accepted the tender of Mr. J. S. Shearman, King Street, Yarmouth, for the supply of drugs to the workhouse.

The Metropolitan Asylums Board has accepted tenders for the supply of various indiarubber goods from the India Rubber, Gutta Percha, and Telegraph Works, Ltd.

Thanet Joint Hospital Board.—E. Wootton & Son, chemists and druggists, 76 High Street, Margate, for air and water bed for the ambulance, 4*l.*

Kettering Board of Guardians.—Hitchman & Son, chemists and druggists, Kettering, drugs and surgical dressings; McDougall & Co. and the Sanitas Co., Ltd., disinfectants.

The Secretary of State for War has accepted the tender of Messrs. S. Maw, Son & Sons, Aldersgate Street, London, E.C., for the supply of surgical dressings, rubber and waterproof goods for the British Army at home and abroad.

Franco-British Exhibition.

Judging at the Franco-British Exhibition began on September 15, the jury being previously addressed in the Congress Hall by Sir J. Cockburn, Senator Dupont, and

Mr. Kiralfy. Group juries, whose duty it is to consider and approve or amend the awards of the class juries, will begin work on September 18, and the superior jury, which makes the final award, will sit on Saturday. Nine hundred experts are engaged in the task of judging the 12,000 exhibits.

Fires.

A fire occurred on September 6 on the premises of Mr. Walter Smith, chemist and druggist, Banks Road, West Kirby, Liverpool. The storeroom was gutted and other damage done. The loss is covered by insurance.

On September 6 a fire occurred at Beddington Corner, Mitcham, Surrey, at the distillery of Messrs. J. & G. Miller. Just before six on Sunday morning smoke was seen to be coming from the further end of the distillery, but as large volumes of steam are frequently seen issuing from the works not much notice was taken. As, however, the quantity of smoke increased very much, Mr. Miller was informed and the fire-brigade summoned. The fire is believed to have been due to the overheating of a flue, the fires at the distillery having been at full pressue during the week. The damage done is estimated at about 600*l.*

The premises of Messrs. A. Bruce Starke & Co., drug-merchants, 83 Upper Thames Street, London, E.C., were completely burnt out during the night of September 12. The stock included essential oils and a large quantity of dry shampoo. Shortly after the fire was discovered an explosion occurred, due to the ignition of inflammable stock. The loss, which is estimated at 900*l.*, is covered by insurance. Messrs. A. Bruce Starke & Co. had only been in the premises for a fortnight, having moved from 195 Upper Thames Street. The latter premises are again being used as offices and for the execution of orders.

A Chemists' Bazaar Stall.

At a bazaar and fête held in the grounds of Cockington Court, Torquay, Mrs. Young (the wife of Mr. J. Young, chemist and druggist, Torquay) presided over one of the stalls devoted to the sale of perfumes and soaps. The stalls were arranged to represent an old Devonshire village, each "stall" being in the form of a thatched cottage with open spaces for windows, in which goods were displayed. Mrs. Young's shop was appropriately named "Violet Cottage" (Mr. Young being the proprietor of the "Real Devonshire Violet" perfume); the interior walls and counters were artistically draped with violet-coloured art muslin, while flowers, mirrors, and pictures combined to produce a charming effect. There was a large display of perfumes, sprays, fancy bottles, and soaps. Unfortunately rain considerably interfered with the attendance at the bazaar, but the takings amounted to 7*l.* the first day and 10*l.* the second. In the photograph which we reproduce Mrs. Young is standing at the door of the cottage.



Dog Law.

At Lambeth Police Court on September 15, Frederick John Atkins, chemist's assistant, of Somerleyton Road, Brixton, was fined 10*s.* and 2*s.* costs for taking possession of a stray dog without giving notice in writing to the chief officer of police of the district. Defendant said he took the dog in out of pure kindness, and was not aware that he was required to give notice to the police. Mr. C. Lockyer, a fellow assistant, said the dog was found in the shop, and defendant took care of it. The defendant applied for a reward that was offered for the recovery of the dog, although he eventually gave it up without any payment. The Magistrate said the defendant had erred in not giving notice to the police, and inflicted a fine as stated above.

Theft Charges.

On September 11 Thomas Bignell was committed for trial at Clerkenwell Police Court on a charge of receiving stolen property belonging to Messrs. Marshalls, Ltd., Colebrooke Row, Islington. Three girls were at the same time charged with stealing the goods which Bignell is alleged to have received.

At Enfield Police Court on September 14 Wm. Henry Gamble (45), general dealer, Ponders End, N., was charged with stealing from the Summerfield Chemical-works, Ponders End, N., a copper still, value 12*l.*, the property of Messrs. Thos. Morson & Son, manufacturing chemists. Prisoner told the detective who arrested him that he bought the copper from a man for 2*l.* He, however, pleaded guilty to receiving stolen goods, and was sentenced to six months' hard labour.

Alfred Buzzard, a traveller, has been committed to the Assizes by the Birmingham Magistrates on a charge of stealing the moneys of his employer, Mrs. Minnie Louise Johnson, a drysalter, Holt Street, Birmingham. The prisoner failed to account for about 60*l.* he had received from customers.

Assistants' Votes.

At the Torquay Revision Court last week Mr. J. J. Bransom, assistant to Mr. J. W. Cocks, chemist and druggist, Tor Hill Road, Torquay, claimed a lodger vote. This was objected to by the Conservative agent. Mr. Bransom said the occupier of the premises was really Mr. Dunsford, Mr. Cocks' senior assistant, but he occupied his rooms by virtue of his being an assistant to Mr. Cocks. Claimant estimated the value of the rooms at 7*s.* 6*d.* a week, and said he would receive more salary if he lived out. The point whether Mr. Bransom is Mr. Dunsford's lodger or service occupier was eventually allowed to stand over.

Midland Notes.

The Coventry and Warwickshire Hospital authorities have entered the lists in the crusade against the abuse of the out-patients' department of their institution, and a dead-set is being made against allowing well-to-do people to take advantage of the privileges offered to the poor.

A middle-aged man named Thomas Gagin was charged before the Birmingham magistrates on September 10 with an assault upon Mr. George Francis Sidney Davis, chemist and druggist, Newtown Row, and with doing 20*l.*-worth of damage to the contents of the shop. On September 2 the defendant, who is the prosecutor's father-in-law, called at the shop and asked to see Mrs. Davis. Fearing violence Mrs. Davis refused to see him, whereupon he picked up a 2-gal. tin of linseed oil and threw it at a glass case, smashing it and several bottles near by. The accused was committed for trial at the Quarter Sessions.

Irish News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Pharmaceutical Society of Ireland.

Students who are preparing for the examinations of this Society should note the following dates, which are the latest for making applications for the October examinations :

Registered Druggist—September 29.
Pharmaceutical Licence—September 30.
Pharmaceutical Assistant—October 5.

Guardians' Doings.

The Oldcastle Guardians have been reminded by the L.G.B. that the claim for recoupment in respect to expenditure for medical purposes is not to hand. The acting Clerk stated that he had not quite finished the accounts, and that he had discovered an overcharge of 11*s.*

The question was raised at the Kells Board of Guardians' meeting as to whether a dispensing doctor was bound to give free medicine to persons obtaining an order but well able to pay for medicine. The Chairman said the doctor could apply to have the order cancelled.

Mr. P. A. McHugh, M.P., has obtained a letter from the Local Government Board in which he is informed that Messrs. Boileau & Boyd, Dublin, must make satisfactory arrangements for the prompt conveyance of medicines from the station to the Dromore West Union, otherwise the contract is liable to be cancelled. At the Guardians' meeting

Mr. McHugh was effusively thanked for obtaining a reply from the L.G.B.

Presentation to Mr. Samuel Gibson.

The President of the Chemists' and Druggists' Society of Ireland (Mr. Samuel Gibson, J.P.) and his wife gave a garden-party on September 9 at his residence, Summerhill, Dunmurry, to the members of the Society. Among those present were: Messrs. W. J. Rankin, John Frackelton, Wm. Doig, R. Cambridge, Wm. Haslett, W. J. Gibson, S. Nevin, John Long, D. Manson, W. Corbett, Jas. Moffett, A. Fee, S. Watson, S. Clements, R. Gibson, A. R. Hogg, H. Shaw, Thos. Sandford, S. Skelton, F. Lindsay, J. Williamson, Hugh Graham, S. Suffern, and Thos. Campbell. During the afternoon a surprise ceremony took place—namely, the presentation of an illuminated address to Mr. Gibson in recognition of his twenty-one years' service to the Society and of his recent elevation to the Magistracy of Belfast. Mr. W. J. Rankin, the Hon. Secretary, called on Mr. Wm. Haslett to present a handsome illuminated address to Mr. Gibson, and Mr. Rankin read the address. Appreciative references were made to the President's services to the Society, and when the applause had subsided Mr. Gibson replied, giving some of his experiences as Treasurer of the Society in its early days. He particularly referred to the work that was needed to promote the passing of the Pharmacy Act (Ireland) Amendment Act, 1890, which he regarded as the Magna Charta of the drug-trade in Ireland. Mr. Robert Cambridge and Mr. Wm. Doig also added appreciative remarks, and finally votes of thanks were given to the host and hostess for their splendid hospitality during the afternoon. Mr. A. R. Hogg, Belfast, took a photograph of the party, the one which we reproduce showing Mr. and Mrs. Gibson in the centre, with the illuminated address in front of them. Mr. Hogg also sends us a picture of the address, which latter is a particularly fine specimen of illumination.



Personal Notes.

Mr. R. T. Herron, pharmaceutical chemist, and Mrs. Herron, Armagh, were among the guests of the Lord Lieutenant and the Countess of Aberdeen at last week's garden-party at the Viceregal Lodge, Dublin.

At a meeting of the Clones Urban Council on September 7 Mr. J. J. Kerr, chemist, Clones, was publicly thanked for his services on the occasion of an outbreak of fire which occurred last month on premises near his medical hall.

Sir. Wm. Whitla, L.P.S.I., has been the recipient of numerous congratulations on the successful termination of the labours of a committee of which he was Chairman, which was entrusted by the Board of Governors with the complete renovation of the Belfast Methodist College.

L.G.B. Annual Report.

The annual report of the Local Government Board for Ireland has been issued this week. It deals as follows with medicines and medical and surgical appliances:

> We have again to report very favourably respecting the quality of the medicines, appliances, and surgical instruments supplied for workhouses and dispensaries during the past year.
>
> The total number of samples of drugs examined by the analysts out of the several supplies was 9,178; and a comparison of the results with the standards shows that the quality of the medicines was exceptionally good.
>
> The proportion of samples not up to standard (1.9 per cent. of the number examined) was the lowest yet attained, and indicated the excellent quality of the supplies. The percentage of unfavourable reports last year was 2.44.
>
> The competition for the contracts for 1907-8 was keen, and the discounts allowed averaged 30.8 per cent. for medicines and 36 per cent. for medical and surgical appliances.

The report of the Advising Pharmacist (Mr. J. E. Brunker, M.A.) is given in the appendix. It is there stated as a remarkable fact that out of 4,449 samples of galenical preparations which contain alcohol, only twenty were found to be deficient in that ingredient; and in only four or five of these was there any serious deficiency. Mr. Brunker adds that, while the highest credit is to be given to the majority of the analysts for the way in which they discharge their duties, the work done by some of them leaves something to be desired, both as to promptness and accuracy. By some of these officers the suggested interval of fourteen days for making up their reports after receipt of samples is considerably exceeded. The medical officers also come in for criticism, as there have been a number of cases where the samples have been incorrectly labelled or too small amount of material has been submitted to the analyst. Details of the dispensary districts and the contractors are also given in the report.

Scotch News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Federation of Pharmaceutical Associations.

The Aberdeen meeting of the Federation, which meets in the Grand Hotel, Aberdeen, on September 18, is to be followed by a private discussion on the Poisons and Pharmacy Bill, opened by Mr. J. Rutherford Hill, and after a free discussion Mr. W. S. Glyn-Jones will reply.

Aberdeen Notes.

The pharmacy of Mr. A. W. Henderson, chemist, Rosemount Viaduct, was broken into last week and 2*l.* 5*s.* in cash stolen. Entrance had been gained to the shop by means of the fanlight above the door.

A rather ill-natured and not well-informed letter appeared in the "Aberdeen Express" last week in reference to the employment of unqualified persons in chemists' shops. The writer alleged that it is the practice with some chemists to leave young lads in charge during the holiday season. The writer also seemed to imagine that the Pharmacy Bill would be one of the subjects discussed at the British Pharmaceutical Conference this week.

Mr. J. R. McHattie, chemist and druggist, Torphins, who is leaving the district, was invited by a number of his friends, on September 9, to the Learney Hall, Torphins, and presented with a roll-top oak writing-table. Mr. J. M. Williams, in making the presentation, spoke of Mr. McHattie's energy and devotion to public duties, and the great services he had rendered the community as Secretary of the Curling, Whist, and Golf Clubs, and of the Village Improvements Committee. He has also acted as Treasurer of the Deacons' Court of the U.F. Church, and President of the Mutual Improvement Association. Mr. McHattie briefly replied.

Dundee Notes.

There are twenty-one candidates for the vacant Chair of Chemistry at Dundee University College. The names include Dr. F. Mollwo Perkin, of the Borough Polytechnic Institute, London, S.E.; Professor J. W. Walker, McGill University, Montreal; Mr. Hugh Marshall, Edinburgh University; and Mr. A. W. Stewart, University College, London.

The "Dundee Advertiser" states that too much chemistry is served up to the farmer and that in literature intended for his use scientific terms should be avoided. Nitrate of soda is, that journal states, a better term than sodium nitrate, and muriate of potash than potassium chloride. A prejudice is created against chemical fertilisers by employing technical names.

Edinburgh Notes.

Business is very quiet, but the executive of the Exhibition having reduced the price of admission it is hoped that the money thus saved may ultimately be spent profitably.

Mr. G. Graham Davidson, chemist and druggist, Earl Grey Street, has one of his windows filled with specialities and watches. He announces that to every purchaser of the displayed preparations to the value of 1*s.* 8*d.* a gold watch will be given at the nominal price of 3*s.*

Glasgow Notes.

The local pharmacists are beginning to show winter requisites in their windows.

During the past week or two a local chemist's assistant has been addressing meetings in connection with the "unemployed."

Mr. David Robb, of the firm of Messrs. Robb & McLees, Middelburg, Transvaal, who is home on holiday, was formerly with Messrs. Frazer & Green, Glasgow.

Mrs. Hendry, Shawlands, who last July ate a small piece of chocolate impregnated with strychnine, has died this week in the Victoria Infirmary, Glasgow. Her son, who gave her the chocolate and took some himself, died within a few hours, but Mrs. Hendry had been in the infirmary ever since.

The Week's Poisonings.

TWELVE fatalities from poisons sold by chemists have occurred during the past week. Of these only four were misadventures. Carbolic acid was taken by Dr. William Rhodes (56), of Bridgnorth, and by Charles Rudd (59), a Earnsley photographer, with suicidal intent; while it was taken by John Scullion (69), of Sunderland, in mistake for medicine.—Two boys were found poisoned in a Leeds park. One recovered; the other, Robert Othick (16), died from the effects of potassium cyanide.—A commercial traveller, named Crisp (24), died in Leeds Infirmary from opium poisoning.—At Kettering, Joseph Benford (55), a shoe-operative, was found dead, and on a bench beside him was a wineglass containing a small quantity of "XL All vaporising fumigator."—Mrs. Susannah Jubb (64), in the course of a drinking bout, swallowed a quantity of laudanum and died as a consequence.—A Horsham gardener named Eyles drank "an irritant poison" in a fit of dementia and died in much agony.—A two-year-old child named Sloan, belonging to Shieldhill, near Falkirk, got hold of a whisky-bottle containing poison, drank some of the contents, and died.—Two suicides were committed with salt of lemon, the victims being Sarah Ann Booth, of Stockport, and Edmund Robinson (26), of Huyton.—The fatality at Poole is dealt with elsewhere.—At the inquest at Teddington, on September 16, on the body of Mary Elizabeth Grant (52), who died from chlorodyne-poisoning, the evidence was to the effect that deceased had been a victim of the chlorodyne habit for some time. She had been known to drink the contents of a 4*s.* 6*d.* bottle in a day. She obtained the drug from various chemists, and the Coroner's officer deposed that he found eighteen 2-oz. and fourteen 1-oz. chlorodyne bottles in her bedroom. He had failed to ascertain the name of the chemist who had supplied her. The Coroner said the pity of it was that they could not put a stop to the supply of these drugs under existing conditions, because anyone could obtain it from different chemists as they wanted it. Death by misadventure was the verdict.

Association Affairs.

Bournemouth Pharmaceutical Association.

THE first outing of this Association took place on September 10, Clifton (Bristol) being the venue. The party—which numbered twenty-eight, about half being ladies—left Bournemouth at 8.37 A.M., breakfast being served on the train. On arriving at Bristol the party made their way to the famous Clifton Downs and the Bridge. After the Downs had been thoroughly explored and admired, Mr. C. Y. R. Pars presided over luncheon at the Clifton Downs Hotel, at which Mr. T. Grant and Mr. A. J. Trebilco (President and Secretary of the Bristol Pharmaceutical Association) were present. The afternoon was spent in visiting the Zoological Gardens, after which tea was taken at the St. Stephen's Restaurant, *en route* to the station. Bournemouth was reached about nine o'clock. The weather was perfect, and the outing was so much enjoyed that it is proposed to make it an annual affair.

Grimsby Chemists' and Druggists' Association.

THE members of this Association journeyed on September 10 to Lincoln, and spent a very enjoyable day. The party included Messrs. Cor. Willson (President), C. H. Ashton, C. Dewing, R. C. Johnson, T. D. Sneath-Watson, and the Hon. Secretaries (C. N. Chapman and F. W. Heely). The members were received at the station by the President of the Lincoln Association (Mr. J. S. Battle), the Vice-President (Mr. W. E. Hill), and Messrs. C. B. Aram, J. Hague, D. S. Wark, and F. P. Watson (Hon. Secretary), the ladies being received by Mrs. Watson. The party were then conducted to the Guildhall, Jews' House, Cathedral, Castle, Prison, the old Bishop's Palace, Tennyson's Memorial, ruins of the Roman wall and Newport Arch. A move was then made to the Albion Hotel, where the members of the Lincoln Chemists' Association entertained the visitors to tea, after which Mr. Willson thanked the hosts for providing such a pleasant afternoon's outing.

Isle of Thanet Chemists' Association.

A WELL-ATTENDED MEETING of this Association was held at the Metropole Hotel, Margate, on September 10. There were present: Messrs. Baily, Edmunds, and Holmes (Ramsgate), Messrs. Snow, Keen, Hewlett, Eastland, Woods, and Gibbs (Margate), Mr. Besant (Westgate), and Mr. Ward (St. Peter's), also Mr. J. Harcombe Cuff (Councillor of the Pharmaceutical Society), and Mr. J. F. Brown (President of the Dover Chemists' Association).

POISONS AND PHARMACY BILL.—The following resolution was carried with one dissentient:

> That the chemists of the Isle of Thanet beg the Council of the Pharmaceutical Society strenuously to oppose in the Commons the Poisons and Pharmacy Bill, as passed by the House of Lords, because it destroys the two vital principles of the Act of 1868, the sale of poisons by qualified persons, and the restriction of the title "chemist" to the individual.

Hull Chemists' Association.

THE first meeting of the winter session of this Association was held on September 15 at the Grosvenor Hotel, Hull. The chair was taken by Mr. C. B. Bell (the President), and there was a good muster of members.

CATTLE-FEEDING.—The Chairman drew the attention of those who dealt with farmers and dairymen to recent experiments on the feeding of calves (*C. & D.*, September 12, p. 409), which showed that cod-liver oil and cottonseed when mixed with separated milk are next in nutritive value to pure milk.

AN ANNIVERSARY.—He reminded the members that the Association was approaching its fortieth anniversary, and he thought the occasion ought to be suitably celebrated. He suggested that a committee be appointed to consider the best way of doing so. A committee was appointed as suggested.

NEW MEMBERS.—The following new members were elected: Messrs. Thirsk, Hull; A. B. Calvert, Prince's Avenue, Hull; W. B. Kenny, Beverley Road, Hull; and E. Parsons Roger, Harrogate (representative of Messrs. Burroughs, Wellcome & Co.). The following were reappointed local secretaries for the Pharmaceutical Society: Mr. A. Richardson, Western Division, Hull; Mr. C. B. Bell, Central Hull; and Mr. George Hoyles, Eastern Division.

POISONS AND PHARMACY BILL.—Mr. Richardson moved:

> That the attention of the Pharmaceutical Council be called to the fact that in the schedule of poisons contained in the Poisons and Pharmacy Bill recently passed by the House of Lords, opium and its preparations are included in Part 1 instead of Part 2 as heretofore, and if allowed to remain in that schedule will cause a great amount of inconvenience and annoyance both to customers who want these preparations for perfectly legitimate purposes and to the chemist supplying the same, and trust the Council will take steps to have this altered.

Mr. Jones seconded, and the resolution was carried.

Births.

Baiss.— At 24 Launceston Place, London, S.W., on September 14, the wife of William Arnold Baiss (*née* Margarita Elena Webster), of a son.

Forrester.—At Darmstadt, on September 4, the wife of G. P. Forrester, of a son—Brian Andrew Laurence.

Hustler.—At North Finchley, London, N., on September 10, the wife of William Hustler, of a daughter.

Marriages.

Bowden—Graham.—At St. Stephen's Church, Upper Mount Street, Dublin, on September 7, by the Rev. Harvey Stewart, M.A., Rector of the parish, Joseph Henry Bowden, pharmaceutical chemist, 136 Lower Baggot Street, Dublin, son of Mr. Henry Bowden, 43 Lower Mount Street, to Elizabeth (Lily), second daughter of Mr. Robert Graham, late of Haddington Road, Dublin.

Irvine—Eltoft.—At Christ Church, Lancaster, on September 16, by the Rev. Mr. Cooper, M.A., James Irvine, chemist and druggist, Kendal, son of the late Mr. William Irvine, The Crescent, Hipperholme, to Mary, daughter of Mr. J. E. Eltoft, M.R.C.V.S., Selborne House, Lancaster.

Macnaught—Torbit.—At Miramichi, Port Glasgow, on September 15, by the Rev. Herbert Reid, M.A., Archibald Hamilton Macnaught, chemist and druggist, son of the late Archibald Macnaught, chemist, Greenock, to Williamina Florence, youngest daughter of the late Mr. Jas. Torbit, Port Glasgow.

Massey—Wood.—At the Congregational Church, Guildford, on September 13, by the Rev. Alexander Cowe, M.A., William Massey, chemist and druggist, 13 High Street, Guildford, to Lena, second daughter of Mr. S. Wood, Leigh, Lancs.

Tucker—Aplin.—At St. Thomas's Church, Trowbridge, on September 9, by the Rev. G. E. Watton, assisted by the Rev. E. P. Knubley, Alfred Emanuel, youngest son of Mr. E. Tucker, of Steeple Ashton, to Murielle Constance, only daughter of Mr. J. H. Aplin, chemist and druggist, Trowbridge.

Wallis—Ibbitt.—At Upper Chapel, Sheffield, by the Rev. C. J. Street, M.A., George Charles, son of the late George Wallis, to Florence, daughter of Mr. Henry E. Ibbitt, chemist and druggist, Ranby Road, Sheffield.

Deaths.

Beale.—At "Southwood," Eldon Park, South Norwood, S.E., on September 12, Mr. Frederick Wilson Beale, chemist and druggist, aged sixty-five. Mr. Beale retired from business at 12 Portland Road, S.E., some ten years ago in favour of his son Mr. Harry W. Beale. He was only ill for a short time before his death.

Boucher.—At St. Ann's Road, Tottenham, on September 9, Mr. Benjamin Boucher, aged eighty-three. Mr. Boucher entered the service of the predecessors of Messrs. Harker, Stagg & Morgan, Ltd., wholesale druggists, when fifteen years of age, the firm at that time being known as "Langton, Langton & Wheatley." He remained with the firm for fifty-four years and retired in 1894 owing to his advancing age. His recollections of the early days of his career were full of interest, extending as they did to the pre-railway period, when all the goods required by country chemists had to be conveyed from London by horse and cart. Mr. Boucher had been through all departments of the firm, and was considered an expert in essential oils. Last Christmas he was seized with a paralytic stroke, but his intellect remained clear until last week, when a second stroke proved fatal. He will be remembered by many in the wholesale drug-trade on account of the confidential position he occupied with Messrs. Harker, Stagg & Morgan, and his long years of service. Mr. Morgan was at the funeral, and also five members of the staff, who have all been connected with the firm for over forty years.

Litherland.—At Palm House, Parbold, on September 11, Mr Henry Litherland, chemist and druggist, aged seventy-two. Deceased, who had been in failing health for six months, was at one time dispenser at the old Wigan Dispensary. About fifty years ago he commenced business as a chemist and druggist in Wallgate, Wigan, subsequently opening branches in other parts of the town. He had served on the Town Council, and the Board of Guardians.

Noble.—At Clifton, Bristol, on September 11, Mr. John Noble, chemist and druggist, aged seventy. Mr. Noble was in business at South Shields before the passing of the Pharmacy Act 1868, where he built up a splendid business on professional and scientific lines. He was apprenticed at Abbey Holme, in Cumberland, served as an assistant at Carlisle, and for a time he managed the business of Messrs. Mawson & Swan, at Newcastle-on-Tyne. He retired from business last February, the style of the firm being then changed to Noble, Reid & Son, under which title it is now carried on. Mr. Noble took a deep interest in public affairs and was a member of the Town Council for several years. He was the founder of the science classes at the old Mechanics' Institute, and for many years was Chairman of the committee of the Free Library. Mr. Noble was a man of charming manners, and won his way into the affections of all who came in contact with him. He leaves a widow, two sons, and a daughter.

Peck.—At Brighton, on September 8, Mr. Alfred Gerard Peck, L.D.R.C.S., New Malden, Surrey, son of Mr. George Peck, chemist and druggist, Cambridge, aged thirty-three. Mr. Peck qualified in 1897.

Waddington.—At Hungerford, on September 10, Mr. John William Waddington, chemist and druggist and dentist. He passed the Minor in 1878 and was for some years in business at High Street, Hungerford. Mr. Waddington retired from business in 1902. Some months ago cancer developed in the throat and as no operation could be attempted he gradually sank and died.

Business Changes.

Properly authenticated business notices (not being advertisements) are inserted in this section free of charge if promptly communicated to the Editor.

The address of Messrs. Burroughs Wellcome & Co.'s general depôt for Italy is now 26 Via Legnano, Milan.

Dr. de Jongh's cod-liver oil depôt has been removed from 210 High Holborn to 182 Gray's Inn Road, London, W.C.

Mr. William Beveridge, chemist and druggist, has reopened his premises at Newmarket Street, Ayr, which were damaged by fire some time ago.

The Tasmanian Eucalyptus Oil Co., Ltd., have removed to larger premises at Carlton Works, Asylum Road, Peckham, S.E. The company's new telephone number is "Deptford 468."

It is announced that the business of H. J. Ison, Ltd., chemists and druggists, Castle Street, Shrewsbury, will in future be carried on under the personal supervision of the managing director, Mr. Arthur Williams.

Mr. James J. Kerr, chemist, Fermanagh Street, Clones, has taken over the establishment of Mr. J. S. Smith, pharmaceutical chemist, who will in future devote his whole attention to his Cootehill pharmacy.

Information Wanted.

Inquiries for the names and addresses of manufacturers, or other trade information, not traceable by reference to the advertisement-pages of "The Chemist and Druggist" and the "C. & D. Diary," or not filed in our private register, are inserted here free of charge. Postcard or other replies to any of the subjoined inquiries (addressed to the Editor "The Chemist and Druggist," 42 Cannon Street, London, E.C.) will be esteemed.

49/30. Where can "Doeta" (ordered in tins) be obtained?

49/4. What is Amyrol, and where can it be obtained?

49/13. Who is the maker of Sanitine disinfectant?

51/30.—Present address of the manufacturers of Imperatrix Soap.

Administering a New Remedy.

AN inquiry was held on September 14 by the Poole Borough Coroner into the circumstances attending the death of Mrs. Isabella Hall, seventy-one years of age, who was the widow of a Tyneside shipowner, and had resided at Branksome Park, Bournemouth.

Mr. Harold Salt, solicitor, appeared on behalf of Mr. S. Hardwick, pharmaceutical chemist, Bournemouth, and Mr. H. K. Reeves, of London, watched the proceedings on behalf of the deceased's family.

It was stated by Mr. Wilfred Hall, son of the deceased, that his mother had suffered from internal complications and a bad hip joint and had been medically attended for several years. She had a paralytic stroke fifteen months ago and had only partially recovered. She came to Branksome Park six weeks ago from Sidmouth.

Miss Ruth Hardwick stated that she was a duly qualified chemist and assisted her father. On September 7 she made up a prescription for the late Mrs. Hall. The only drug in the prescription was medinal.* It was a new drug, and she had never dispensed it before. On the prescription was the direction "one table-spoonful." It was to be used as an enema. She omitted to write on the label the quantity to be used as a dose, according to the prescription, which was usually done. She noticed it was an unusual prescription, but her father was away at the time and she could not call his attention to it. Replying to a juryman, she said it was customary for another person to check a prescription after it was dispensed, but on this occasion she did both.

A Juror : The prescription was returned with the medicine and therefore the dose was bound to be known.

Replying to Mr. Salt, witness said they did not keep this drug in stock and had to telegraph for it, as it was a case of emergency. The bottle indicated it was to be used on different occasions, as it said : "To be used as rectal injection an hour before bedtime each night." She had considerable experience in dispensing, and for four weeks acted as dispenser at West Ham Infirmary. It would have been better if a "barred" bottle had been used indicating the doses.

Sarah Overill, a trained nurse in attendance on Mrs. Hall, said it was for sleeplessness that the prescription produced was given. She knew nothing of the drug the prescription contained. The prescription was given to deceased's daughter by the doctor. It was administered by witness as an enema because it was ordered. She thought the dose was to be administered all at once as there was nothing on the bottle as to directions, and she thought it was probably diluted. She wasted about an ounce, or an eighth part. The patient went to sleep about an hour afterwards and the sleep became more profound. She then telephoned to the chemist about the injection, and asked whether the whole bottleful was to be given. Miss Hardwick referred to her copy of the prescription and said a tablespoonful only had to be given. Dr. Coles was sent for and attended till death. Witness had looked at the prescription before administering the injection. She took what was meant to be half an ounce by the letter "S" to be a figure "8" and to mean eight ounces. She had never seen half an ounce written like that before. It was not unusual to administer an enema from 8-oz. bottles.

Dr. Coles, looking at the prescription, said the mistake was possible.

The Coroner said it was clear that the dispenser understood it.

Dr. Alfred Charles Coles deposed to being called to the deceased and finding her unconscious and in a deep sleep or coma. He heard that an injection of the drug mentioned had been given. There was a weak heart action and this condition continued till her death, ninety-six hours precisely after the drug had been administered. The prescription he had examined, and it was quite in order. The drug was entirely new to the medical profession. The first account in English only came out on July 15 this year, and that was a translation from the German.

The Coroner : And advertised here in this paper as a perfectly safe drug in all its forms?

Dr. Coles : So it may be. I am of opinion that death resulted from coma, but whether that coma was produced by or followed the use of this new drug, medinal, I am not prepared to say. What the exact fatal doses or symptoms of this drug are, when given to a healthy person, I do not know ; neither do I believe anyone in England can tell us, and not in Germany either. Witness added that he had learned what the deceased had been suffering from. What results would occur from the administration of this drug to a patient over seventy-one years of age, who had already had a stroke and marked heart disease, he could not say. They did not know the antidote for the drug, for they did not know its action. He could not say that the dose caused death. Replying to Mr. Reeves, witness said coma might have resulted from another stroke or diseased condition of the kidney, which was the direct cause of the first stroke. It was claimed for the new drug to be a modification of the drug veronal and also to be safer and better than veronal. Replying to Mr. Salt, the doctor said he could not distinguish any signs that he would have expected to find where a large dose of such a drug had been given. He would have expected to find a marked alteration of the blood, but on examining the blood, taken during life by special methods, he failed to find these symptoms. The prescription was given by a Sidmouth doctor.

The foreman intimated, in reply to the Coroner, that they did not deem a post-mortem examination necessary, and they had heard sufficient evidence to arrive at a verdict.

The jury returned a verdict to the effect that death was due to heart failure, but whether accelerated by an overdose of the drug medinal there was no evidence to prove.

* Medinal is the mono-sodium salt of diethylbarbituric acid.

Royal Photographic Society.

THE annual exhibition of this Society opened on September 16 at the New Gallery, Regent Street, W., and includes a wide range of photographic work. Architectural subjects are very popular. No. 22, a view through a doorway into a church choir, is transparent in the shadows and full of detail in the high lights. No. 56, a quaint old doorway with hanging lantern, is interesting; so also is No. 23, "An Ancient Gateway," by F. C. Boyes. "The Neptune Fountain, Nurnberg," by Brown and Tilney, is good. Among the landscapes "Schloss Harburg," by Brown and Tilney, is very satisfactory, the composition being particularly good. "Sunshine and Rain," by J. C. Batkin, is broad in treatment, whilst the "Olive Grove, Corfu," is quite artistic. Snow scenes have given the artists an opportunity for rendering delicate shadows; "Winter," by G. H. de Nagyrév, is one of the best. Others to be noted are "Winter Showers" and "January." London is a favourite field for fog and smoke effects, No. 85 being quite typical. Notice should be taken of Nos. 126, 189, and 217. The application of photography to the study of Nature has resulted in some very fine exhibits by Douglas English, William Farren, and Alfred Taylor.

Perhaps the finest exhibit, scientifically, is that of a spectrum of the light from Mars, which shows the line for water-vapour. There is, too, a colour-photograph of the solar spectrum taken direct in the camera. Experimental tricolour is represented by a series of flower subjects, portraits, and still-life. The OZOBROME CO., LTD., are showing some interesting prints. The LETO-PHOTO MATERIALS CO., LTD., have an exhibit of "Seltona" prints and "Boardoids." They show also a good range of prints on "Tintona" and gaslight papers. SANGER-SHEPHERD & Co., Gray's Inn Passage, London, W.C., have a good example of tricolour work by their "imbibition" method. They also show repeating-backs for exposing three-colour plates, and a series of light filters. BURROUGHS WELLCOME & Co. have a show of their tabloid photographic chemicals, among which are "Rytol" developer and chromium intensifier. In an illuminated showcase WRATTEN & WAINWRIGHT, LTD., show some good specimens of light filters and x-ray photographs on Wratten "x-ray" plates. ILFORD, LTD., show an excellent range of lantern-slides on their plates, some very fine tones being obtained. Their papers and flat films, as well as plates for special work, may also be examined.

Legal Reports.

Sale of Food and Drugs Acts.

Solution of Ammonia.

At Evesham County Petty Sessions, on September 14, Mr. Edwin Lewis Foss, chemist and druggist, High Street, Broadway, was summoned for selling adulterated solution of ammonia not of the nature, substance, and quality demanded. Mr. Cecil Duncan, public analyst for the county of Worcester, said the sample was deficient in ammonia to the extent of 12 per cent. Defendant said the only excuse he could give was that the solution evaporated owing to the warm weather. Defendant was fined 2*l.* and 2*l.* 2*s.* 6*d.* costs.

Veterinary Surgeons Act.

"Cat and Dog Doctor."

At Newport (I.W.) Borough Police Court on September 14, Thomas Lee, groom, Pyle Street, Newport, was summoned by the Royal College of Veterinary Surgeons for an infringement of the Veterinary Surgeons Act. Mr. Hiscock, who prosecuted, said it is important that only properly qualified persons should undertake operations on animals in order to prevent unnecessary suffering. P.S. Hawkins said defendant displayed a notice-board outside the Swan Hotel stables whereon he was described as a "practical cat and dog doctor." The board was removed when these proceedings were taken. Defendant said he was formerly in the employ of a veterinary surgeon, and in that capacity performed operations on dogs. He had since treated about eight dogs, but made no charge, trusting to the generosity of those who employed him. The Bench fined him 10*s.* and 8*s.* 6*d.* costs, and allowed a second charge to be withdrawn on payment of 4*s.* costs.

Bankruptcy Reports.

Re George H. Waugh, L.R.C.P., Grosvenor Road, Belfast, Druggist and Medical Practitioner.—This matter came up at the Belfast Bankruptcy Court on September 14 before Mr. Registrar Houston, on a motion to vary his ruling in reference to furniture (see *C. & D.*, August 29, p. 347). Mr. James Alexander appeared for the assignee and Mr. R. J. Porter for the Globe Furnishing Co. After some discussion the motion was allowed to stand over for the Judge next week.

Re Frank Collins Langley, 127 Praed Street, Paddington, Chemist and Druggist.—The first meeting of creditors was held on Thursday, September 17, before Mr. G. W. Chapman, Official Receiver, at the London Bankruptcy Court. The Chairman reported that according to debtor's statements he commenced business in 1892 at 12 London Street with a capital of 450*l.* The lease ran out in June 1906 and he removed to Praed Street. He lost a lot of customers through the removal, and the business had gradually declined ever since, to which fact, combined with increased opposition, the failure was attributed. The statement of affairs was not lodged, but the debtor roughly estimated his liabilities at 600*l.*, and had in the shape of assets a few shillings in cash, a gold-cased watch worth 2*l.*, stock 150*l.* to 200*l.*, fixtures 50*l.*, furniture 60*l.*, and book debts 60*l.* In the absence of any offer the estate was left in the hands of the Official Receiver to be wound up in bankruptcy.

Gazette.

Partnerships Dissolved.

Blunt, W. B., and Evans, T. M., chemists, Derby, under the style of Blunt & Evans.

Mellersh, W. F., and Aldis, A. W., dental surgeons, East Sheen, Surrey, under the style of Mellersh & Aldis.

Petty, H., and Bellamy, F. S., manufacturers of household specialities, Leicester, under the style of the Leicester Chemical Co.

Watts, J., and Birtles, W. W., oil merchants, etc., Hull, under the style of Jno. Watts & Co.

The Bankruptcy Acts, 1883 and 1890.

Adjudication Annulled.

Langley, Frank Collins, Praed Street, Paddington, London, W., chemist

Deed of Arrangement.

Purse, Alfred Henry Marmaduke, New Durham Road, and 26 Guisboro Street, Sunderland, Chemist.—Trustee: R. A. Brown, 16 John Street, Sunderland, chartered accountant. Dated September 3; filed September 9. Liabilities unsecured, 884*l.*; estimated net assets, 236*l.* The following are creditors: Allen & Hanburys, Ltd. (15*l.*); S. Maw, Son & Sons (77*l.*); D. & W. Gibbs, Ltd. (10*l.*); Smith & Co. (11*l.*); Yardley & Co., Ltd. (11*l.*); Hanger, Watson & Harris, Ltd., Hull (16*l.*); J. F. Wilkinson, Manchester (13*l.*); J. Ismay & Sons, Newcastle-on-Tyne (97*l.*); A. D. Purse, Sunderland (448*l.*); G. W. Robinson, Sunderland (21*l.*).

New Companies and Company News.

Holland's Pills, Ltd.—Capital 2,500*l.*, in 1*l.* shares. Objects: To adopt an agreement with J. J. Holland, and to carry on the business of pill manufacturers, etc. The first subscribers are: J. W. Willis, 1 Grove Crescent, Kingston, auctioneer; F. Waller, Springfield, Duke's Avenue, New Malden; and J. G. Notman, 58 Southwark Bridge Road, S.E., clerk. Private company.

Holzapfels, Ltd.—Capital 500,000, in 1*l.* shares (200,000 preference). Objects: To acquire the business and assets of Holzapfels Compositions Co., Ltd. (incorporated 1890), to adopt an agrement between the said company and H. J. Criddle, and to carry on the business of manufacturers of and dealers in anticorrosive and antifouling compositions and paints of all kinds, varnishes, enamels, cements, oils, paint-removers, dyes, pigments, colours, and chemical industrial and other preparations, etc. Minimum cash subscription 25 per cent. of the shares offered to the public. The first directors are M. Holzapfel, A. C. A. Holzapfel, A. G. Davidson, H. E. Deadman, C.B., J. A. Donald, A. G. Holzapfel, O. Levin, J.P., T. M. Little, C. Petre, and W. Walthers (all directors of Holzapfels Compositions Co., Ltd.). Qualification 1,000 shares. Remuneration, 400*l.* each per annum.

Lennon, Ltd.—The incorporation of this eompany in Cape Colony, as announced in the *C. & D.* last week, was made as far back as 1898 (see *C. & D.*, December 10, 1898, p. 947). The New Companies Act necessitates the registration of such companies at Somerset House, and hence the republieation of the particulars. The name of the first director should have been R. A. Fairclough, and not as given last week.

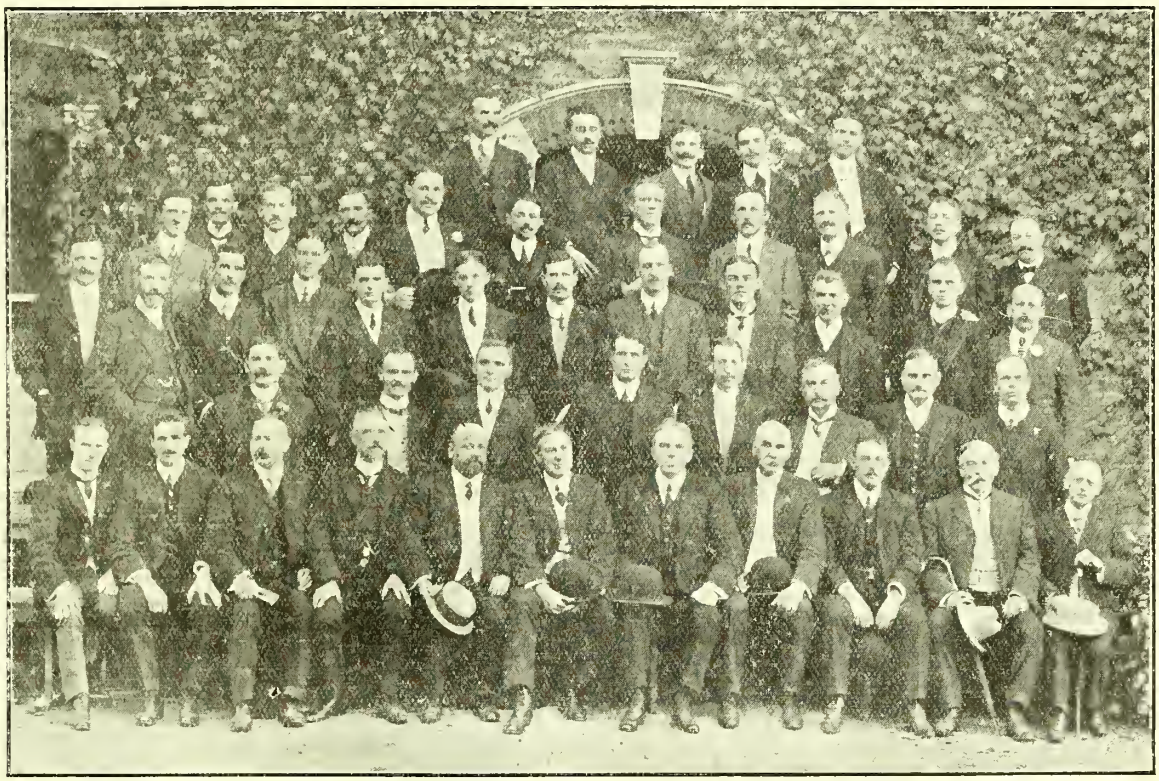
Price's Patent Candle Co., Ltd.—An extraordinary general meeting was held on September 11 at the Cannon Street Hotel, E.C., Sir Peter Spokes presiding. In declaring a dividend of 15*s.* per share for the half-year ending June 30, 1908 (see *C. & D.*, September 12, p. 427), the chairman said that some portion of the net profit of 28,432*l.* is due to profit resulting from the sale of investments, and also to appreciation in the value of investments, which in recent years, owing to the state of the market, had been written down. He formally moved that the dividend be paid. Mr. C. T. Harris seconded, and the motion was carried without discussion.

Mortgages and Charges.—Debentures registered: *John Bell & Croyden, Ltd.*, chemists, London. 6,000*l.* debentures created by resolution of August 5, 1908, amount of the present issue being 1,500*l.*, charged on the company's undertaking and property, present and future, including uncalled capital.—*W. Edwards & Co. Depôt, Ltd.*, dental surgery-requisite manufacturers, London. 300*l.* debentures created by resolution of August 19, 1908, the whole amount being issued on same date, charged on the company's undertaking and property, present and future, including uncalled capital.—*Grimshaw Bros. & Co., Ltd.*, chemical manufacturers, Manchester. A memorandum of satisfaction to the extent of 500*l.* of debentures dated August 1, 1901, securing 2,900*l.*, has been filed. The following do not refer to fresh issues, but to total amounts of mortgages and charges outstanding on July 1 and now filed according to law: *Bradford and District Mineral-water Co., Ltd.* Mortgage, 1898, securing 1,000*l.*—*George Coverdale, Ltd.*, chemists, York, Ripon, Scarboro', Rotherham and London. Mortgage or charge, 1906, securing 3,750*l.*; and mortgage, 1904, securing 277*l.* 6*s.* 9*d.*—*William Douglas & Sons, Ltd.*, dealers in farinaceous goods, Putney. Debentures, 1899, securing 9,097*l.* In the event of nonpayment of a loan from the London and County Banking Co., Ltd., for 5,000*l.* a mortgage will be created for that amount.—*D. & W. Gibbs, Ltd.*, soap manufacturers, London. Amount 27,560*l.*—*Harvey's Glaze, Ltd.*, drysalters, London. Mortgage, 1908, securing 850*l.*—*Josiah Hardman, Ltd.*, coal-tar distillers, Milton, near Stoke-on-Trent. Charges, 1901 and 1907, securing 8,500*l.*

A Posting Conference.

LAST week the entire staff of British representatives of Messrs. Parke, Davis & Co. and the majority of the Continental representatives assembled in London for their periodical "posting" in the specialities and operations of the firm. Upwards of forty gentlemen attended, and from Monday morning at nine o'clock till Wednesday evening the whole time was devoted to the work on hand. The European manager, Mr. Fisk, presided, and introduced the business with a few remarks, and thereafter the various heads of departments dealt with their special subjects, an interchange of opinion taking place between the representatives on the various points discussed.

The first speaker was Mr. Maben, who took up the consideration of bacterial and biological products, opsonins, vaccines, serums, blacklegoids, etc., physiological standardisation, and all the newer specialities of the firm.



Executive Staff and British and Continental Representatives of Parke, Davis & Co., London.

Mr. Brown, superintendent of the Hounslow laboratory, then gave a detailed account of the work there and of the numerous checks and counterchecks that are made use of to secure absolute accuracy, and he also explained the value of the reference number on each package, which enables the entire history of any article to be traced. After each of these addresses and, in fact, throughout the whole three days, numerous questions were put by the representatives, and in this way many doubtful points were elucidated. After the company had lunched together, an adjournment took place to Hounslow, where the afternoon was spent inspecting the new laboratory. At this stage Mr. Harry Fisk took the photograph of the representative staff which is here reproduced.

On reassembling on the Tuesday morning, Mr. G. R. H. Clark, head of the Sales Department, occupying the chair, other heads of departments dealt with their respective branches of the business, the head of the shipping department, for example, dealing with "Treatment of an order from start to finish. Irregularities in writing orders. Goods reported missing. Contracts. Returns." The accountant dealt with financial considerations, and, similarly, experts dealt with such subjects as "Medical Equipments and Hypodermic Outfits," "Hospital Work," and "Sales Work and Detail Work." In the evening the representatives and members of the office staff dined together at the Criterion Restaurant, Mr. Fisk presiding, and Messrs. H. J. Fisk and Clark officiating as croupiers. Sir Almroth E. Wright and Dr. John Matthews, of St. Mary's Hospital, were present as guests, and in all sixty-two sat down to dinner. After the loyal toasts, Mr. Maben proposed the health of the guests, and both gentlemen replied, Sir Almroth Wright giving a most interesting account of his work in connection with vaccine-therapy. Thereafter addresses were delivered by various Continental representatives, each speaking in his native tongue, and in this way Austria was represented by J. M. Millet, Belgium by P. Sevrin, France by P. D. Collier, Germany by H. Kili, Italy by G. C. Cotta, Russia by E. Werth, Scandinavia by Joh. Grönbech, and Spain by A. Garcia. Mr. Millet spoke of the conference as the first international congress of the firm Parke, Davis & Co., and of the value to the Continental representatives of an interchange of experiences and views, and concluded by wishing the firm a "Vivat, Crescat, Floreat." During the evening Mr. Maben showed a number of slides illustrating the operations carried on in the home laboratory of the firm in Detroit. Instrumental music was furnished by Mr. Harry Fisk on the zither banjo, and by Mr. Nash on the violophone, and songs were sung by Mr. Jamieson and Mr. White Taylor, Mr. Clark being the accompanist.

On Wednesday morning the conference was resumed and continued till the afternoon, and at four o'clock the entire representative staff met at the Therapeutic Inoculation Department of St. Mary's Hospital. Here they were received by Sir Almroth Wright, Captain Douglas, and Dr. Matthews, who showed the preparation of bacterial vaccines and explained as far as possible in the limited time the various operations in the taking of the opsonic index.

Trade Notes.

Kuli Ink-remover is a new carded speciality for typists' use which is being sold by Messrs. F. Newbery & Sons, Ltd., 27 and 28 Charterhouse Square, London, E.C.

Reducine, for which we have had several inquiries lately, is advertised in this issue. The makers are the Reducine Co., 38 South Frederick Street, Dublin.

Messrs. Jas. Burrough, Ltd., Cale Distillery, Hutton, Road, Lambeth, London, S.E., are now producing an extra rectified neutral spirit for use in perfumery to which we direct attention.

Moskola Toilet-cream is a new preparation which is being advertised in this issue. The makers, the Moskola Manufacturing Co., 70 Vincent Square, Westminster, S.W., invite applications for samples.

Fumouze & Cie., who have a very attractive show at the Franco-British Exhibition, give an illustration of their stand in their advertisement in this issue. A note is also given of the company's specialities.

Dia Malt.—The British Dia Malt Co., 11 and 13 Southwark Street, London, S.E., are advertising in our columns the advantages of liquid and dry Dia Malt. The diastasic activity is the strong point of the analyses.

The Sixteenth Annual International Grocery, Provision, Oil and Italian Warehouse and Allied Trades' Exhibition and Market is to be held in the Royal Agricultural Hall, Islington, London, N., from September 19 to September 26.

Messrs. H. Bronnley & Co., Ltd., Warple Way, Acton Vale, London, W., have since last week sold replicas of their exhibit at the Franco-British Exhibition to the Civil Service Stores, Haymarket, London, S.W., and the Civil Service Supply Association, Ltd., Bedford Street, London, W.

Advertisement Illustrations.—The North British Illustration Co., Ltd., 2 Darley Street, Bradford, are specialists in illustrations for advertisements. They issue a special catalogue for chemists, which contains about eighty blocks of suitable advertisements for the drug-trade. Particulars are given in the company's advertisement in this issue.

Company Formation.—Those who are interested in this subject should obtain a booklet, by Messrs. Curtis, Gardner & Co., Ltd., King's House, King Street, London, E.C., entitled "The Advantages of Limited Liability and Company Formation." This and other business booklets are referred to in Messrs. Gardner's advertisement in The Chemist and Druggist.

The Auto-strop Safety Razor is a good line for chemists to sell. The fact emphasised by the Auto-Strop Safety Razor Co., Ltd., 61 New Oxford Street, London, W., is that constant change of blade is not required because the stropping arrangement keeps the edge of the blade in perfect condition. The auto-strop razor sells at 21*s*.

Battersea Polytechnic.—The new prospectus of this educational institution has been issued this week and is supplied, post free, for 4*d*. Classes are held in a great number of subjects, those in inorganic, organic, and technological chemistry, natural science, and physics being of most interest to our readers. Photography is taught on Tuesdays (elementary) and Thursdays (advanced). The session opens on September 19.

Ukala is an external remedy for pneumonia, asthma, and rheumatism which the proprietors the Ukala Co., 8 South Street, Finsbury, London, E.C., are putting forward with the utmost confidence. It is even sold with a promise to return the money if no good results from using the remedy. To help to make Ukala known to chemists a scheme is announced in our advertising columns which is as novel as it is bold. We have had a talk with one of the inventors of Ukala, who has told some wonderful things regarding the remedy which convince us that he at least has the enthusiasm of a firm believer.

Bottle Catalogue.—Messrs. Kilner Brothers, Ltd., King's Cross, London, N., have recently issued a new edition of their bottle catalogue. This is splendidly produced on art paper and is fully illustrated. Part VI. of the catalogue is of special interest to our subscribers, and is devoted to wholesale druggists' and poison-storing bottles and the numerous special bottles employed in the retail trade for packing castor oil, cod-liver oil, emulsions, coca-wine, quinine-wine, malt extract, and salines. Dispensing and perfumery bottles and feeding-bottles are also illustrated. Price-lists are separately issued. Chemists should apply for copies of the new catalogue.

Pine-tree Lozenges.—Messrs. Thos. Guest & Co., lozenge-manufacturers, Carruthers Street, Ancoats, Manchester, inform us that the sale of their pine-tree lozenges last winter exceeded that of even linseed, liquorice and chlorodyne lozenges in the palmiest days. It is this fact that has influenced the firm in bringing out a very attractive series of showcards and posters to enable chemists to make distinctive and profitable window-shows. The lozenges are neatly packed in tins or cartons, and the showcards, of which we have samples before us, are above the average in design and colouring. Particulars of these are given in Messrs. Guest's advertisement in this issue.

Flexa Hair-brushes.—Messrs. Rigby Battock, Ltd., 50 Bethnal Green Road, London, E., have shown us a sample of the new Flexa hair-brush which they are producing. It possesses several distinct advantages over brushes designed for a similar purpose. Brushes of this kind have been made for years in which wires or bristles are fastened to an indiarubber basis to give the required flexibility. The trouble has been that the rubber perishes and so diminishes the life of the brush. In the sample which we have tried bristles of excellent quality are fastened into a leather base, thus securing great strength and flexibility and assuring lasting properties for the brush. The Flexa brushes are a good line for chemists' sale.

Winter Emulsions.—Messrs. Ayrton, Saunders & Kemp, Ltd., 34 Hanover Street, Liverpool, have submitted samples of their cod-liver-oil emulsions and petroleum emulsion. The emulsions, which are further medicated with hypophosphites, are perfectly white and of a beautiful creamy consistence. We have not, of course, been able to apply the time-test, but are assured that the emulsions do not separate even after being kept for a considerable time. They are packed in about twelve different standard styles, several of which we have had the opportunity of inspecting. There are, moreover, alternative cartons or wrappers for those chemists who want to have an exclusive or distinctive packing. The special list, which gives quotations for the various sizes and styles, is worth consulting by those who are looking up their stocks of these articles of winter trade.



Ladies at the Meeting. Taken in the Council Chamber of the Aberdeen Town Hall on Tuesday, by Cleworth.

Baptisia Tinctoria in homœopathic doses was, according to Dr. J. Cavendish Molson, the medicine which saved the King's life when in 1871 he was lying ill with typhoid fever. It was prescribed by Dr. F. H. Marwell Blaydes.

Observations and Reflections.

By "Xrayser."

The New French Codex

appears to be now available to favoured persons, and as the interval between the publication of the last and the present editions of the authoritative work is close on a quarter of a century and covers a period of notable pharmaceutical activity, the critical and comparative reviews of the work which we may now expect are likely to be of considerable interest. There were only four distinct Codexes in the nineteenth century, and the intervals strike us as rather long, accustomed as we are to occasional clamours from British and American pharmacists for regular decennial revisions. Possibly something of the sort is being heard this week at Aberdeen. In France the more frequent issue of the national Pharmacopœia would seem to be of greater importance than elsewhere because of the laws which there aim to protect the population against new compound remedies. But those laws are read with an amalgam of sense, which minimises the inconvenience which might otherwise result from a period of twenty-four years intervening between two issues. New Pharmacopœias involve considerable expense and labour and some danger, and it is doubtful whether these are adequately balanced by the advantages of more numerous revised editions. With us, at least, a new Pharmacopœia is not much more than a register of progress. No one need prescribe or take its medicines, or limit himself to them. Perhaps the principal benefit of a new edition is the stimulus it gives to pharmaceutical criticism and investigation. To afford our scientific pharmacists only one, or at most two, such opportunities during their active careers would be unkind to them, and perhaps a loss to the art of pharmacy itself.

The Conservative Character

of the French Codex has been one of its principal attractions, and it may be hoped that this has not been entirely improved away by the twentieth-century Vandals who, as one of them told the *C. & D.* correspondent, have been bringing it "up to date." The venerable theriaca, we are told, has at last disappeared, after standing as a monument of medical genius for nearly 2,000 years. I rather think it is still retained in the Spanish Pharmacopœia; if not, the Codex was its last official refuge, and even in the 1884 edition the work of mutilation had made some progress. The revisers then omitted the dried vipers which were the addition to the original confection of Mithridates on which Andromachus depended for nearly twenty centuries of scientific glory. It will not be surprising if we find that with theriaca the more modern but still many-centuries-famous diascordium and confection of hyacinth, with sealed earth, crabs' eyes, and real harts' horns, are banished into history. What is still more to be feared is that the names of pharmaceutical benefactors, which the Codex has hitherto religiously preserved, will now be ruthlessly ruled out of its pages as they have been from those of other Pharmacopœias. No one, in these days, cares to know who was the inventor of acetanilide, and if a medical council appropriates the successful formula of a quack remedy it compounds with its professional conscience by suppressing as far as possible any title which might suggest its origin. The Codex, however, with its Laudanum secundem Sydenham, Onguent de la Mère Thècle, Pilules Ecossaises d'Anderson, Elixir de Garus, Eau de Melisse des Carmes, and a score of other proprietary names, was careful to reserve credit to whomsoever it was due.

A Sanguine Temperament

must be possessed by those chemists who are joyfully anticipating injustice and persecution this side of Christmas. The autumn Session will be an age of miracles if it is going to provide leisure for Mr. Almeric FitzRoy to get his pet scheme on the statute-book this year. Evidently the Poisons and Pharmacy Bill is not to be an unopposed measure. All Governments are tender towards agriculturists; but even for their *beaux yeux* there will be a number of members of the House of Commons who, with Sir John Batty Tuke, will not care to facilitate the trade in poisons. Moreover, the programme of work which awaits legislators when they reassemble on October 12 is sufficient to occupy ten times the ten weeks which may be allotted for it. For the first day of the Session twenty Government Bills and seventy-three in charge of private members are set down for consideration, and the first group includes the formidable questions of licensing and education. There are nearly a dozen other Bills which either are or have been before Special Committees. Besides all these, allowance has to be made for the usual proportion of unforeseen discussions, "scenes," and obstructions of various kinds. So that unless the Cabinet should decide that unqualified poison-vendors are absolutely necessary for the nation the prospect of pharmaceutical legislation this year is very flimsy.

The Physiological Section

of the British Association was one which scored well at the Dublin meeting. The address of the President, Dr. J. S. Haldane, F.R.S., may be especially referred to as a piece of close reasoning in support of views which he himself declared to be held by only a minority of modern physiologists. The orthodox opinion, it appears, is that biological phenomena are or may be, when they are more fully understood, explainable by physical or chemical processes. That is what the minority —an increasing one, says the President—do not accept. A working hypothesis, he points out, must be capable of working, and he shows that from the ovum to the adult organism the difficulties of accounting for development by mechanism or by chemical action are tremendous. The "vital principle" of past teachers was not a definite conception, and could not, therefore, become a working hypothesis. But the facts which compelled such a theory are more prominent than ever. "What Du Bois Reymond called the spectre of vitalism meets us at every turn, thinly disguised under such names as cell-autonomy." Lavoisier's measurement of animal heat compared with the output of carbon dioxide and the disappearance of oxygen in respiration was an immense step forward. But you cannot develop animal heat beyond a certain point. You cannot increase animal energy indefinitely. You cannot regard cell-formation as a process of crystallisation, as Schwann did. What the President seemed to want to say—though, of course, he dare not from such a chair—was that you must adopt some such conception as that of Paracelsus of an Archeus in the system which controls, regulates, and modifies physico-chemical action, and provides the activity which is associated with life. Dr. Haldane believes that a meeting-point between biology and physical science will be found; and then if one of the two has to be swallowed up it will not be biology.

The Æsthesiometer

is another trophy from the Physiological Section. It is an instrument, said to be like a compass, which registers brain fatigue by the diminution of skin-sensitiveness The theory is that the person experimented on gets less able to recognise the exact distance in millimetres between two needle-points applied to his skin as his brain becomes exhausted. The inventor, Mr. Sackville Lawson, says we often think we are tired when we are not. But might we not equally err in guessing at a millimetre?

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GENUINE SULPHATE OF COPPER.
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Editorial Comments.

From the Silver City.

Aberdeen is better known to the world as the Granite City than as the Silver City, but an old poet, who did not dream of the future favour that his native granite would acquire, used the argent phrase, and it has been revived of recent years. In that northern capital the British Pharmaceutical Conference has met this week for the second time in its history, and under Mr. Robert Wright's presidency a good amount of work has been accomplished, especially in "the promotion of friendly intercourse and union among pharmacists." On this occasion, and not for the first time in the Conference's history, the achievements in that respect somewhat overshadowed the communications resulting from pharmaceutical research. The latter, indeed, had a struggle to reach the level of a Conference reputation.

We were reading the other day a strongly expressed ten years' old opinion that the British Pharmaceutical Conference was a failure; it had then a declining membership, a financial deficit, and a waning enthusiasm. It is not better, but rather worse, in membership, the total having fallen to about 750; and the finances still leave something to be desired, but in the course of the decade the Conference has grown marvellously in one respect—viz., in determination for continuance, and in confidence that the organisation fulfils a useful purpose in British pharmaceutical economy. There is nothing else that brings pharmacists together in such a spirit of unity, free from the exclusiveness and officialism which provincial men and others feel in the Bloomsbury atmosphere.

Our report of the proceedings in Aberdeen this week begins on p. 452. We have endeavoured to make the account full and to carry with the words something of the spirit of the meeting, but we recognise that it must be used chiefly for reference purposes, therefore a more pithy commentary may help busy men who desire to learn in as short a time as possible what was done.

Civic Conversazione.

The Municipal Art Galleries were the scene of the civic welcome to members of the Conference on Monday evening. This was unusually well attended, many medical practitioners being present. The proceedings were of a pleasant nature, and a speech of welcome was made by Bailie Milne, the Senior Magistrate, to which Mr. Wright, Mr. R. A. Robinson, and Mr. Giles replied. The conversazione was a splendid beginning to the work of the Conference.

The Sessions of the Conference

commenced on Tuesday morning in Marischal College, the younger of the two Colleges which constitute the University of Aberdeen. Here the Debating Hall of the Students' Union was allocated for the ordinary meetings, although the Mitchell Hall was also at the Conference's disposal, but it is a place seated for about 1,000 people, and was in use during the daytime this week for examination purposes. Principal Marshall Lang and Professor MacWilliam wel-

comed the Conference on behalf of the Aberdeen University, Dr. John Gordon (a Major man) on behalf of the medical profession, and Mr. Giles on behalf of chemists.

The Presidential Address.

Mr. Wright delivered an unusually long address, and one which will surprise those who know him only as a galenical investigator. He spoke as a retail chemist to retail chemists—a circumstance which cannot be astonishing to those who have read the appreciation of the President which appeared in The Chemist and Druggist of August 15, in which it was shown that Mr. Wright is primarily a business man, who spends his days in attending to his customers, and snatches from the quiet hours of the off-season sufficient leisure to carry out his researches. We have given a title to the address—"British Pharmacy: Past, Present, and Future." After some introductory remarks and personal references, Mr. Wright proceeded to deal in succession with (1) the rise of pharmacy from the ranks of the grocer and apothecary, (2) the province of pharmacy, (3) the present condition of pharmacy, (4) the sale of patent or quack medicines, (5) counter-prescribing, (6) pharmacists and poisons, (7) the present position of pharmacy, and (8) the future of pharmacy. These subjects contain the elements of popular favour, and if Mr. Wright occasionally spoke to the gallery, there was nevertheless much plain commonsense in his remarks. It is usually safe to accept the teachings of history as indicative of what may happen in the future under similar conditions. Coupling the first and fifth sections of the address, the prophetic eye may see another evolution in the not far distant future. The apothecary of 100 years ago was the analogue of the pharmacist of to-day; and the apothecary has been definitely merged in the ranks of medical practitioners. That may some generations hence be the fate of the pharmacist unless he is entrusted by the public, either direct or through medical practitioners, with more of the work in which he is by examination proficient—viz., the compounding of medicines. Undoubtedly the pharmacist is regarded by the public to-day in the same light as was the apothecary a century since—viz., as a man to whom it is useful to turn for treatment in "simple ailments." That service he must render as part of the scheme by which he earns a living, because throughout the major part of Great Britain medical practitioners in their process of making a living supply their patients with the remedies they prescribe. Mr. Wright indicated how this latter condition providentially ceased in Scotland about half a century ago, with the result that the majority of retail chemists in Scotland are pharmacists by practice as well as by complement. Is it possible that this condition can become universal in England and Wales? We do not think so; at all events, before it happens something of far greater moment is likely to take place in pharmacy itself. The elements of the fourth and sixth sections of Mr. Wright's address indicate that there will be cleavage in the ranks of what we call pharmacy, one (and that the larger section) devoting themselves exclusively to selling the public what they want, and the other to meet public requirements in dispensing and supplying the more scientific pharmaceuticals; the latter thus putting their special knowledge into practice.

The Communications.

The Conference has long ceased to attract, just as the Pharmaceutical Society has, a certain high class of research in pharmaceutical chemistry. Early in its history the Conference received communications from workers who were in the front rank of chemists, the subjects being directly connected with pharmacy, such as the constitution of alkaloids and the chemistry of essential oils. At the present time a great deal more of such high-class work is done in Great Britain in pharmaceutical and other laboratories, but little of it comes to the Conference. We think some effort should be made to attract more of it. In the early days there seemed to be more intimate relations between the officers of the Conference and those allied to what are called scientific societies. It is not necessary to elaborate this statement except to say that we have heard of instances of discouragement of those who are capable of communicating to the Conference papers which are the result of laboratory research rather than of dispensing-counter experiment.

Twenty-three papers were communicated on this occasion, five of them being read on Tuesday and the rest on Wednesday. The discussions began rather poorly on Tuesday, there being a lack of spirit about them, but after members had mentally tightened their body belts to counteract the universal one-o'clock feeling things went better.

Lunan on the Formates.

Preparations of formic acid have for centuries been used in Continental therapeutics, but it is only within the past three years that the formates have been put forward by French physicians as muscular tonics. The Edinburgh school of physicians in this country have taken them up, and it was appropriate to have a communication from Mr. George Lunan on the subject. In his paper he described formic acid in its chemical relationships and properties and commercial strengths, and added concise particulars about the properties and doses of the formates of calcium, lithium, potassium, sodium, and strychnine. He considers that a combination of the calcium, sodium, and strychnine salts in an aromatic glycerin menstruum is therapeutically the best and most stable preparation, and it agrees with the patient, provided not more than 3 to 5 grains of the formic radicle is given in each dose thrice daily. The discussion which followed was chiefly notable for a ruling by the President that physiological and therapeutic questions should not be discussed upon it. Mr. T. Stephenson had done so cleverly, showing that the chemist must have some ideas on such subjects, and illustrated that remark with the absurdity of strychnine formate which is unnecessary, as strychnine is the therapeutic agent, the amount of formic acid in it being too small. Mr. Lunan stated that lead is not an impurity in commercial formates.

Cash on Garcia Nutans and Omphalea.

This communication by Professor Theodore Cash, F.R.S., was read by Mr. J. F. Tocher. It was principally an abstract of what has already been published in the "Journal of Physiology." All the seeds are of euphorbiaceous origin, but while those of the *Omphalea species* (*megacarpa* or *diandra* and *triandra*), or the extracted oil, form a pleasant and simple laxative, the seeds of *Garcia nutans* are ten times as powerful and contain an acrid principle with a marked local purgative action, the total effect in full doses being that of a drastic hydragogue cathartic. The presence of a principle similar to ricin was indicated but was not confirmed owing to lack of material. The oil extracted from the seeds of *Garcia nutans* rapidly undergoes change and becomes a light yellow solid with lessened physiological action, and appears to give further opportunity for ferment research. The purgative effect of the oil is less marked than that of the seed, but its use as a purgative will require caution even if the change could be avoided. There seems little likelihood that castor oil will be displaced by the new product.

Clague on Electro-therapeutics.

The ruling as to the discussion of therapeutics notwithstanding, demands upon the pharmacist nowadays make him the co-worker with the physician in several directions, one of which was illustrated by Mr. T. Maltby Clague in his notes on the electrolytic administration of drugs. In this he referred to the experiments by Leduc (described in the *C. & D.* last year) with strychnine and potassium cyanide, in which a rabbit was killed by strychnine ions given off at the positive pole, and another rabbit killed with cyanogen ions flowing from the negative pole. The clinical results

obtained by Dr. Lewin Jones in St. Bart.'s hospital by topical electro-ionic applications of certain salts were also alluded to, and Mr. Clague, who is an Associate of the Institute of Electrical Engineers, concluded with some hints to pharmacists on the electrical and chemical conditions which have to be observed in the electric administration of drugs. Mr. Clague's practical demonstration of electrical ionisation of sodium chloride and potassium iodide was a most effective bit of work, since it showed the members exactly what takes place.

Alcock on Powdered Drugs.

The object of Mr. F. H. Alcock's communication was to show the value of the action of solvents on certain powdered drugs in determining their purity, the ash yielded by the exhausted marc or extracts being also noted. Thus gentian yields approximately 35 per cent. to water, liquorice 25 to 27 per cent., cantharides up to 35 per cent., nux vomica 26 per cent., and quassia 1 to 3 per cent. Treated in 90-per-cent. alcohol commercial samples of powdered guaiacum resin left from 7 to 18.8 per cent. of insoluble matter It should be noted that all the figures are for commercial powders, and they show variability. These points were noted in the discussion; Mr. Noble, of Newcastle, pointing out that good gentian should yield not less than 40 per cent. of extractive, and Mr. Cowie objecting that solution figures are useless by themselves—microscopic characters must be considered also—to which Mr. Alcock replied effectively.

Bristowe-Harrison on Bismuth Salicylate.

In this paper Mr. Bristowe-Harrison, of Howards, advocates the use of 0.720 ether for extracting the free acid, testing the residue after evaporation with dilute ferric-chloride solution. The tabulated results show that the B.P. test is useless owing to decomposition of the salt by the alcohol used, and the "B.P. Codex" test using chloroform gives negative results with less than 0.1 per cent. of free salicylic acid, and using benzol there is no reaction even with that amount. The paper created a lively discussion, the chief points being that while the spirit-test is useless and the chloroform-test little better, the use of benzol in the manner proposed by Mr. W. Lyon, Edinburgh, is effective in detecting free acid. Mr. J. R. Hill described how this should be done.

The Conference adjourned at 1.40 P.M. until Wednesday. The rest of the afternoon was devoted to luncheon, granite production, and tea at Sea Beach.

Thursday's proceedings did not begin with Mr. Cowie's four papers, these having the distinction later of taking up 50 per cent. of the time devoted to the whole of the communications reserved for this day. The first paper was by

Hooper on Charas,

to which a personal interest was attached in so far as it was Mr. David Hooper's tribute to the position of his old student-chum—the President. The paper dealt with the history, commerce, chemistry, and physiology of the resin of Indian hemp as naturally obtained in India and adjacent countries. It was really a complete monograph on the subject, and adding something to existing knowledge of this most disappointing, but in some cases valuable, drug. Following this (also in the absence of another) came a paper by

Wyatt on B.P.Cx. Formulas.

Half a dozen of the preparations which the "British Pharmaceutical Codex" has adapted or adopted from various sources were critically examined by Mr. Harold Wyatt. They include Elixir pini et terpini, essence of rennet, black draught, raspberry juice and elixir, and glycerophosphate syrups.

Cowie on Jalap and Scammony Resins.

The first of Mr. W. B. Cowie's four papers was on jalap resin, as to which he said that in the examination of commercial jalap resin the B.P. tests are of comparatively little value on account of the absence of specific details. The U.S.P. tests are greatly in advance of the former, but he proposed a scheme which has yielded fairly concordant results. It includes determination of moisture, ash, solubility in 0.720 ether, acid value, and saponification equivalent. Similar methods were applied to scammony resin, which was the subject of the second paper; and in the third (Mr. B. M. Brander assisting) an examination of resin from Mexican scammony was dealt with. These papers became the most notable of the meeting on account of the amusing and personal discussion which they gave rise to, and which may be unintelligible to the uninitiated. We may therefore explain that Mr. Cowie is a teacher of pharmacy in Edinburgh; so is Mr. Wm. Duncan, and the latter has worked on the same subjects. To appreciate the results see the report on p. 478 of what was said. It was not altogether creditable to the B.P.C. that so much time and temper should have been wasted upon matters which do not advance medicine or pharmacy materially.

Cowie and Broadbent on Ether.

Some people think that ether is ethylic oxide, but Messrs. W. B. Cowie and T. O. Broadbent have discovered that it is not, and they suggest that 0.720 ether should alone be used pharmaceutically, thus excluding the cheaper 0.735, which is efficient for most medicinal purposes. Interesting information regarding commercial ethers was given by Mr. D. Lloyd Howard and Mr. Edmund White in the course of the debate. Those specially interested should read the report of the discussion.

Simpson on Mercurial Pill.

One of the Blue List subjects for investigation was the quality of commercial mercurial pill mass, and it was undertaken by Mr. Gilbert Simpson, pharmacy lecturer at Robert Gordon's College. His method of working was simple. First he tested samples for oxides, the mercurous by solution in warm acetic acid, and mercuric by solution in warm diluted hydrochloric acid. Traces of mercurous oxide were found in three out of twelve samples, and of mercuric oxide in one. Then he determined the free mercury by distilling it from a portion of the mass in a combustion tube packed with sodium carbonate, asbestos, and soda-lime at one side, and soda-lime and asbestos at the other. Part of the mercury distilled was found adherent to the products of combustion, from which it was freed by ether, and the whole was ultimately obtained dry in theoretical amount. The B.P. mass yields 33.34 per cent. of mercury in this way, and trade samples (which varied in consistency) yielded from 30.93 to 35.93 per cent. The discussion on the paper revealed the surprising fact that most of the speakers seemed to think that Mr. Simpson's process was paramount, and other methods of assay were recommended.

Crewe on Mercurial Ointment.

The United States Pharmacopœia orders mercurial ointment to be assayed by washing away the contained fats with ether, then with hydrochloric acid, and drying and weighing the residual mercury. Mr. P. H. Crewe finds the process difficult in many cases, and prefers to saponify the fats with potash and methylated spirit, collecting the mercury, which is then washed, dried, and weighed. In his communication the two methods were compared, and shown to be approximately the same in results. Figures were given for thirteen samples of the ointment supplied by wholesale houses. The B.P. preparation should contain 48.5 per cent. of mercury; twelve of the specimens showed from 44.3 to 49.3 per cent., and the thirteenth 53.5 per cent. The lowest was made with a petroleum-base. Twelve samples were purchased from retailers as ung. hydrarg. B.P., and yielded from 45.7 to 53.8 per cent. of mercury; three samples purchased as ung. hydrarg. fort. contained 41.3, 46.9, and 48.1 per cent.; two purchased as ung. hydrarg. yielded 16 and 46.3 per cent.; and four purchased as mercurial ointment were all the diluted preparation, showing 14.4 to 22.4 per cent. of mercury, while one was made with petroleum-base. Tin was detected in one or two cases.

Gilmour on Scots Pharmacy.

An excellent contribution to pharmaceutical history was given by Mr. J. P. Gilmour in his paper entitled "Phases of Pharmacy in Scotland." Starting with the Picts, he went on to speak of domestic pharmacy prior to the days of Buchan's "Domestic Medicine" and gave interesting particulars of Scots apothecaries in the fourteenth to the eighteenth centuries, when chemists and druggists first began to be heard of. It was in the penultimate year of the sixteenth century that the Glasgow Faculty of Physicians and Surgeons received a charter, under which it has, within its province, similar powers as those of the Society of Apothecaries, London, in granting diplomas to persons practising pharmacy and medicine. Mr. Gilmour

also dealt with Scots pharmacopœias, associations of pharmacists, and concluded with a chapter on academic pharmacy, in which he speculated upon the changes that may result in practice through University courses and degrees in pharmacy.

Wellcome Laboratory on Iron Arsenates.

In the first of two papers from the Wellcome Chemical Research Laboratories Dr. Power and Mr. Harold Rogerson described the characters of official iron arsenate. The history of that medicine was given in the light of pharmacopœial records. Methods of making and testing were included, and the authors showed that the amount of ferrous iron contained in a specimen of iron arsenate prepared in accordance with the directions of the British Pharmacopœia —namely, 7.11 per cent.—would correspond to 18.9 per cent. of anhydrous ferrous arsenate. The pharmacopœial test requires nearly 10 per cent. The only official standard for the arsenic content of iron arsenate is that of the Italian Pharmacopœia, which requires about 46 per cent. H_3AsO_4, corresponding to 24.29 per cent. As. In the second paper the preparation of a soluble ferric arsenate was described by the same authors, and the characters of this scale compound (virtually a citro-arsenate of iron and sodium) were fully given. Mr. William Duncan considered that ferric arsenate itself (as recommended by him) is a better substitute for the ferrous salt.

Umney and Bennett on Drug Standards.

In view of the progress of British Pharmacopœia revision, Messrs. J. C. Umney and C. T. Bennett communicated some observations on standards for alkaloidal drugs and fluid-extracts of the same. Taking the U.S. Pharmacopœia as the latest expression of the requirements, they compared with these the results which they obtained during the past three years with crude drugs obtained from the open market, giving the alkaloidal yields. The drugs so treated were aconite-root, belladonna root and leaf, cinchona, coca-leaves, colchicum seeds and corms, conium-fruit, guarana, henbane-leaf, hydrastis, ipecacuanha, nux vomica, opium, pilocarpus-leaves (four species), scopola, and stramonium. The figures obtained from commercial drugs are of great utility as showing the extent of natural variation in alkaloidal contents, and the authors specially commented upon pilocarpus-leaves, recommending those of *P. microphyllus* as being readily obtainable and more reliable in alkaloids than the official jaborandi. The fluid-extracts of this group which they recommend for inclusion in the B.P. are those of aconite-root, belladonna-root, cinchona, coca, colchicum-seeds, conium-fruit, guarana, henbane, hydrastis, ipecacuanha, nux vomica, and pilocarpus; but they also give figures for scopola and stramonium fluid-extracts. The communication contains many valuable analytical and practical data and hints which should be considered by the Pharmacopœia revisers.

Quant on Cascara Sagrada.

Since Mr. R. Wright communicated to the Conference (twenty years ago) a formula for debitterising liquid extract of cascara sagrada by means of calcined magnesia much work has been done on this subject; but apart from the more classical researches of Jowett and Tschirch workers have aimed to combine efficiency and elegance—almost irreconcilable characteristics for a laxative drug like cascara sagrada. Mr. Ernest Quant in his communication struck a happy mean between the extreme causticity of the fixed alkalies and the feeble debitterising power of calcined magnesium by suggesting the use of freshly precipitated magnesium hydroxide. This, in the proportion of 24 grains to the oz., is added to water along with a proportion of glycerin, and the drug macero-percolated with the mixture, a fluid-extract being prepared *sec. art.* The product is pleasant to taste, and active. In discussing the paper Mr. T. Stephenson and Mr. White said that debitterising is more a question of drug and method of making the liquid-extract than of alkali used.

Wright on Strychnine Standards.

A paper following up the suggestion of Farr and Wright at the Birmingham Conference in 1896 to take into account the amount of brucine in galenical preparations of nux vomica by calculating it into strychnine by means of a proper factor and correspondingly modifying the strychnine standard. However, the experiments of Drs. Dixon and Harvey on the comparative physiological action shows that the actions of strychnine and brucine are so markedly different as to preclude the expression of either alkaloid in terms of the other.

Pollard on Valenta's Test.

When equal weights of a fixed oil and glacial acetic acid are mixed at, say, 80° C., a clear mixture is formed, and it remains clear until a lower temperature is reached. The temperature of turbidity varies with different oils; thus cottonseed oil is 53°, and olive oil 70° or thereabouts. Mr. E. W. Pollard, B.Sc., explained the test fully, telling how it should be carried out, giving a figure of the apparatus employed and hints on precautions to be taken, especially as to the use of an acetic acid free from water.

Taylor on Podophyllin.

When freshly prepared podophyllum resin of the British Pharmacopœia is entirely soluble in 90 per cent. alcohol. Mr. Samuel Taylor shows in a brief communication that the resin in part gradually becomes insoluble; thus at the end of one year the soluble sample contained 0.7 per cent. insoluble, and at the end of two years 2.4 per cent. It may be possible to deduce the age of a sample from the amount of insoluble matter in it.

This paper ended the scientific proceedings, and

The Finish Off

was quickly given. Mr. Giles, on behalf of the local association, accepted the gift of books from the Bell and Hills Fund. Then came votes of thanks, and Mr. Maltby Clague, on behalf of Northumbrian chemists, invited the Conference to meet in Newcastle-on-Tyne next year. Mr. Foggan and Mr. N. H. Martin supported this in speech, and the invitation was accepted. The election of officers was then unanimously agreed to, Mr. J. F. Tocher, Ph.C., B.Sc., F.I.C., of Peterhead, being the new President, and Mr. Maltby Clague, who was local secretary to the Conference when it last visited Newcastle, is to take on these duties again, with Mr. Noble as his assistant. The meeting will probably be held in the last week of July. Thus ended the formal proceedings of the forty-fifth Conference. It now enters on the forty-sixth year with promise of continued usefulness; and if a wider outlook of its possibilities be taken before its Jubilee is celebrated, we may in that year have a President in the Chair representing Britain overseas, for in this body we have the one Imperial pharmaceutical organisation of the British Empire, which might be the means of uniting more closely all British pharmacists. There are the germs for this in the B.P.C. membership at home and abroad.

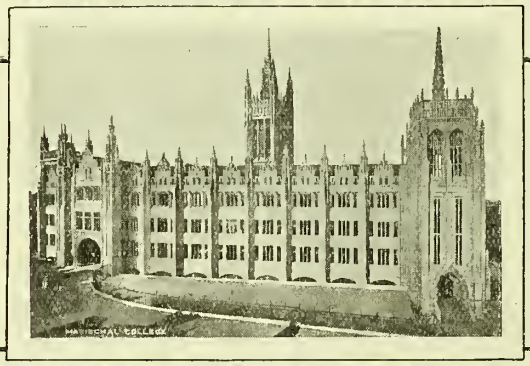


[*Photo Cleworth.*

Mr. R. A. Robinson, Chairman of the L.C.C., and Sir Ed. Evans, Chairman of the National Liberal Federation, leaving Marischal College.

"Let Whig and Tory a' agree" is a new B.P.C. motto.

British Pharmaceutical Conference



BON ACCORD

INITIUM SAPIENTIÆ TIMOR DOMINI

FORTY-FIFTH ANNUAL MEETING, ABERDEEN, SEPT. 14-17.

IT was in 1885 that the Conference first met in Aberdeen, and happily many local pharmacists who were the hosts then are still to the fore, and were able to assist a younger generation of their kin in the arrangements for the second visit, which commenced on Monday evening of this week. It may be accepted as a tribute to the progress of pharmacy and pharmacists in public esteem that on the present occasion the Aberdeen Town Council officially welcomed the Conference, invitations having been issued by the Lord Provost, Magistrates, and Town Council for a *conversazione* in the Municipal Art Galleries. We have in preliminary articles given some indication of the remarkable character of these buildings and the collections of art which they contain. These are arranged on two floors, sculpture exclusively being arranged on the ground floor, and the Macdonald and other collections of pictures on the second floor. On entering the spacious central gallery is seen (it is pictured on the next page), and it was here, at eight o'clock on Monday evening, that the reception was held. Sir Alexander Lyon, the Lord Provost, was not present (he being on a visit to the Franco-British Exhibition with his two sons), but Lady Lyon was there, and assisted the Magistrates in receiving the guests. The Magistrates present were Bailies Milne, Lorimer, Wilkie, Hutcheon, Todd, and Coutts. The Treasurer of the city and several Councillors were also present. The Bailies wore their crimson robes and chains of office, and were attended by the civic officers in their scarlet uniforms, their pennon-decked halberds giving an additional decorative touch to the group. Nearly 1,000 invitations had been issued, and it was computed that 800 guests were present. The Aberdeen and county drug-trade were in force, and there were so many from a distance that it would almost be unfair to attempt to name the scores with whom one exchanged greetings—time not sufficing to note all. We may say, however, that London sent a good contingent of retailers, wholesalers, and manufacturers, Mr. R. A. Robinson, as Chairman of the London County Council, commanding the hearty greetings of his municipal *confrères* in Aberdeen. Manchester, Bradford, Edinburgh, Dundee, Dublin, Belfast, and Glasgow were also well represented; while Newcastle-on-Tyne, as the Conference town of next year, was represented by several prominent men. After shaking hands, most of the guests walked up the marble stairways to the gallery and looked down on the unusually gay scene below. A musical programme was provided, but before it was commenced Bailie Milne welcomed the Conference to Aberdeen in a brief speech. Local newspapers had already told the public that it was the British Pharmaceutical Society that was coming, and Bailie Milne naturally followed suit. A Conference meeting without this slip would be incomplete. The Bailie mentioned the fact that Aberdeen is one of the healthiest cities in Scotland, the death-rate having fallen to ten per thousand. He touched upon

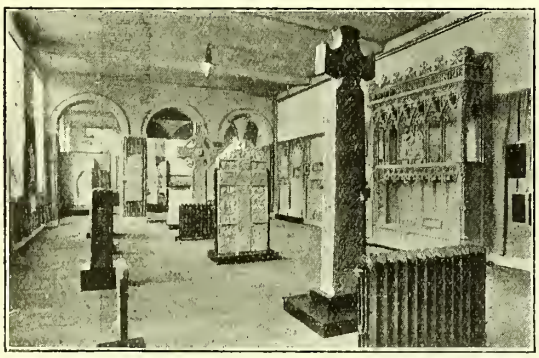


Sir Alexander and Lady Lyon

Aberdeen's educational work, and, speaking of local pharmacy, said :

He could well remember the late Mr. Charles Davidson, of the firm of Messrs. Davidson & Kay, whose son is one of the respected professors in the University of Aberdeen. He could well remember, also, Mr. Reid and Mr. Johnston, and, to come to the present day, they had their good old friend ex-Bailie Paterson; also Mr. Souter, of Messrs. Souter & Shepherd, a firm of long standing in Aberdeen, and their friend from Peterhead, Mr. Toeher, who had made a name for himself in many ways, and who this year had done what very few men had been able to do—to take his science degree while attending to a large business in Peterhead. He understood Mr. Toeher had earned the goodwill and recognition of the Carnegie Trustees, who had given him a large sum of money to enable him to go on with his research work.

Bailie Milne was followed by Mr. Robert Wright, President of the Conference, who acknowledged the civic welcome



CELTIC COURT OF THE ABERDEEN SCULPTURE GALLERY.
These pictures of two typical Courts in the Municipal Art Galleries (where the Civic Reception to British Pharmacists was given on Monday evening) are typical examples of the richness of the place.

and thanked the Town Council for their hospitality. He hoped and believed that the calling he represented is worthy of such a welcome as the city had given them, and after touching upon the more general aspects of pharmacy as a profession and business, Mr. Wright neatly mentioned the presence of the Chairman of the London County Council—a Yorkshireman like himself—and called him to help in thanking the civic authorities. Mr. R. A. Robinson then ascended the rostrum, and in an exceptionally happy manner and well-phrased sentences spoke of the satisfaction which the reception gave him as a pharmacist and municipal worker. In the course of his speech Mr. Robinson said :

It was not his duty to state the objects of the Conference, for they all understood them. They are very worthy objects, and when he heard Bailie Milne state how low the death-rate is in Aberdeen he could not help thinking that that was due to the excellence of the drugs made by the pharmacists in the city. (Laughter and applause.) He congratulated the city on the low death-rate, and he congratulated the citizens on the splendid city they possessed. Speaking for himself, he only wished to add, as representing a very large constituency this year, and as representing the Conference there from all parts of the country, that he re-echoed the words of Mr. Wright. Theirs was a Conference worthy of being taken notice of. It had for its object very high ideals, while the scientific part of its business was the advancement of the knowledge of pharmacy. He was glad they had been so kind as to welcome the Conference, and, on behalf of himself and the visitors, he begged very heartily to thank them.

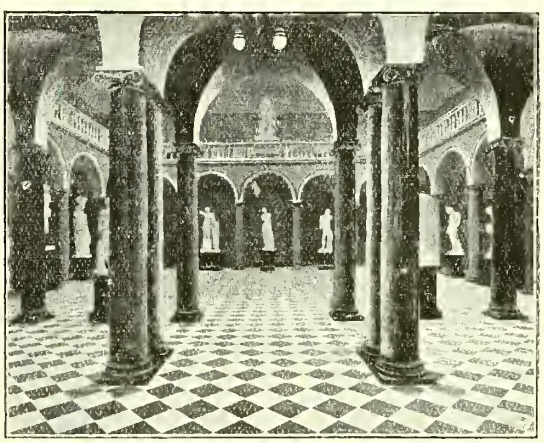
Mr. WILLIAM GILES, on behalf of local pharmacy, also spoke briefly.

It was expected that the musical programme would by this time have been half through, but it was nine o'clock before Miss Mabel Youngson had the opportunity of singing "For all Eternity," an item followed by "The Holy Friar," well sung by Mr. George A. Park. Miss Lizzie Munro and Mr. James F. Murray also sang well, and these four vocalists sang quartette pieces, while an efficient orchestra, conducted by Mr. W. Stavert, played several selections up to 10.30. Altogether the *conversazione* was a delightful reunion and a good beginning to the work of the week, the sharp rain which came on a little after eight o'clock not seriously damping ardour or enthusiasm.

Business on Tuesday, September 15.

A bright autumn morning greeted those who were out early on this day, and by nine o'clock members had begun to wend their way to Marischal College, which is but a few minutes' walk from Union Street. The Mitchell Hall of the College was in use this week during the daytime for Preliminary examinations, but the University authorities had set aside the Debating Hall of the Students' Union for the sessions of the conference. It was well suited for the purpose, holding 300 comfortably on the floor and in the gallery. It was expected that proceedings would commence at 9.30, but it was five-and-twenty minutes later before the University beadle led the Presidential party on to the platform. Mr. Wright was accompanied by Principal Marshall Lang, Mr. R. A. Robinson, Sir Edward Evans, Professor MacWilliam, Dr. John Gordon, Mr. N. H. Martin, Mr. W. A. H. Naylor, Mr. J. P. Kay, Mr. William Giles, Bailie Todd, Mr. George Lunan, Mr. J. F. Tocher, Mr. D. Lloyd Howard, Mr. Thomas Stephenson, Mr. E. S. Peck, and Mr. E. White. The President's supporters had apparently been selected to represent academic and pharmaceutical interests. Mr. John Smith, the President of the Pharmaceutical Society of Ireland, was also present, and was called upon later to take his place on the platform. Fully 200 ladies and gentlemen were in the hall when the President came in, and they gave him a hearty welcome.

The first half-hour of the morning was devoted to speeches of welcome and acknowledgment, Principal Marshall Lang and Professor MacWilliam speaking for the University, Dr. John Gordon for the medical profession, and Mr. William Giles for local chemists. The President and Sir Edward Evans acknowledged. Principal Lang left after the apologies for absence were intimated from the chair, and Mr. Wright rose at 10.30 to deliver his address, which occupied exactly



CENTRAL COURT OF THE ABERDEEN SCULPTURE GALLERY.
In this Court the Magistrates received their guests, and speeches were given and a musical programme rendered.

sixty-five minutes. It was a big venture, and it says much for the manner of delivery that the later portions of the address were especially followed with evident pleasure. Mr. Robinson and Mr. Tocher (Peterhead) moved the vote of thanks, and Mr. N. H. Martin, as the senior Past President, put it to the meeting. There was a large exodus when these compliments were paid and acknowledged, only about forty gentlemen remaining for the formal reports, which were all disposed of between 11.50 and 12.10, when the reading of papers commenced, five out of twenty-two

being read and discussed before the meeting adjourned at 1.40 P.M. until Wednesday morning at 9.30 A.M.

We now report the proceedings in greater detail.

Addresses of Welcome.

On the invitation of the President, the Very Rev. Principal Marshall Lang, D.D., rose to welcome the Conference on behalf of the University authorities. He said :

Mr. President,—It is my pleasant duty to extend the cordial welcome of the University to you and to the members of this Conference. My only regret is that statutory examinations make the use of the University hall necessary for statutory purposes, and that consequently you assemble in this less elevated and less spacious chamber. But there may be compensations for this apparent disadvantage—you will be drawn closer to each other. (Hear, hear.) Your vocal cords will not be strained in speaking, and your auditory nerves will not be taxed in hearing—(laughter and applause)—and, perhaps, the results of your discussion will be compounded in more admirably framed conclusions and resolutions. (Applause). Anyhow, you will have the Mitchell Hall this evening. (Applause.) I think you will admire its proportions and the lighting, through many stars twinkling from the roof and the artificial light will readily blend, not with black coats perhaps, but with the light dresses and the fair faces of the ladies who will then give charm to the scene. (Applause.) Your Society, sir, is connected with a science that has made rapid strides. To-day, freed from the extravagances of Alchemy, and built up by solid experiments and inductions, it occupies a position of commanding influence and importance. (Applause.) The eighteenth century was, if not the birth-time, at least a period of marked development of this science. It was the century of Boerhaeve, of Black, of Lavoisier, of Cavendish, of Priestley, and of others whose names are illustrious. Aberdonians are apt to claim that in every great movement they have had a great part. I am not aware that this University contributed largely towards this naissance or renaissance; but I recall at this moment two names—those of the two Gregorys, members of a distinguished Aberdeenshire family—father and son, who at the end of the eighteenth century or beginning of the nineteenth century—especially the son William, who was a Professor in King's College—were both chemists of credit and renown. I do not venture even to touch on the branches and the aspects of chemical science. It is too great and wide a subject for an ignorant layman like myself. And, in view of what the twentieth century is bringing forth, and the wonderful discoveries connected with radio-activity and the possibilities which Sir William Ramsay has indicated of even making gold out of silver, I feel that discretion bids me be silent, and leave the story of the science to the imagination or to the knowledge of my audience. This only I will say—looking at the list of subjects of research that has been suggested for this Conference, and having regard at the same time to the limited opportunities of many whom I address—this only I will say, that, in scientific training, the palm must be given not to the man of vast information, whose knowledge only encumbers him and is undigested and unutilised, but to the one who, animated by the spirit of inquiry, searches into and gets a special glimpse of the nature, the properties, the affinities, the combinations, the changes by the action of affinity of substances : he is the true scientist. (Applause.) The subject of your Society, Mr. President, has special relation to the medical side of chemistry. If I am not incorrect in my data, it was in 1843 that your



Mitchell Hall, Marischal College, Aberdeen. [*Photo, F. W. Hardie.*

Lent to the Conference for its meetings. Here the concert and dance were held on Tuesday evening. Presented to the University by the late Dr. Charles Mitchell, of Newcastle-on-Tyne. One of the most magnificent modern examples of classic architecture. The heraldic window is one of the largest in the world, and fine—though new. The rostrum and chair used by the Principal are cen turies old.

Society—[The Pharmaceutical Society of Great Britain.—Ed.]—was incorporated by Royal Charter, and the object of the incorporation was to secure a restraint against ignorance and incapacity, and to encourage knowledge and fitness for the work of dispensing, and this object was confirmed by statutes recently passed. Now, as one of the great public, I must look to your Society for protection. You can deal very drastically with us poor mortals. (Laughter.) You can poison us very easily. Without killing us exactly, you can make medicines that our physicians prescribe much more disagreeable, much more disordering of the internal economy, much more pain-giving than they need be, and, therefore, I am interested as a representative of the *profanum vulgus* with the progress of your Society. (Laughter and applause.) For a society creates an honourable tradition and an ideal for all its members, and your ideal is a dispenser who shall have culture and competent knowledge, and shall be alert in his observance, exact in his measurements and proportions, who shall use always the best material and see that all prescriptions are carefully attended to. Therefore I say God speed to your work. (Applause.) Looking at the list of subjects that are to occupy your attention I can see that you have a very varied programme. The subjects are beyond my ken. I do not know exactly what cascara is—(laughter)—I know what "lethargy" is, but I don't know what "litharge" or some such name is. (Laughter.) I can appreciate raisins—(laughter)—but I don't understand Jalap resins. (Laughter.) All these are terms with which you conjure; and I am sure that before your labours are finished you will have acquired an information, you will have received an instruction, that will send you back to your scenes of labour wiser though not sadder men. Well, Mr. President, tho weather conditions are not within the control even of the Pharmaceutical Society, but you have begun in sunshine, so I hope you will continue and end in sunshine. I trust you will be braced by the tonic of our atmosphere, and you will certainly be refreshed and regaled by the hospitalities of our city. And so I trust when, in some pensive moment, you recall the Aberdeen Conference you will feel that your time in the Silver City by the sea marks one of the brightest and sunniest memories of your life. (Applause.)



VERY REV. J. MARSHALL LANG, D.D., Vice-Chancellor and Principal of Aberdeen University.

The PRESIDENT also called upon

Professor MACWILLIAM, who said that as a member of the professorial staff of the University he wished to associate himself with the words of welcome which the Principal had offered them. He was sorry there were not more members of the professorial staff present, but the Conference fell at a time that was peculiarly awkward from their point of view, as most of them were away on vacation before the opening of the winter session. He would say, however, and with every confidence, that it was from no want of interest or lack of appreciation of the very important work of the Conference that there was not a more numerous representation of the professoriate present. To them in the medical faculty the work of the Conference appealed very specially, and touched them, he scarcely required to say, very closely. They knew that the work was of extreme value, and though the Conference was a younger thing than the Pharmaceutical Society—beginning, he believed, in 1864—its recurring meetings had been marked by decided progress and decided advantage to all who had participated in them. He desired to offer his most hearty wishes for the marked success of the meetings of the Conference from its scientific and from its social aspects. (Applause.)

FOR THE MEDICAL PROFESSION.

The PRESIDENT asked a hearing for

Dr. JOHN GORDON, who said he had been called on to offer a welcome to the Conference on behalf of the medical profession of Aberdeen, and he did so most cordially. Being an old pharmacist himself, he thought he had, deep down in the inmost core of his heart, still a rill of sympathy flowing for pharmacy. (Applause.) When he knew how helpful pharmacy was to the medical profession he could not shut his eyes to the value of that Conference. It was with very great pleasure that they welcomed them to their northern shores. He was sure their coming there would act as a tonic to them all. He was sure that in the coolness of the atmosphere their animated discussions would be somewhat tempered. Science knew no boundaries. There were no limitations to it. Medicine leant kindly on the shoulders of pharmacy and pharmacy kindly looked up to medicine. They, as workers, were all endeavouring to widen the boundaries of scientific knowledge. Each step they took forward into the darkness cleared their way to the next step, and onwards they passed. They, as medical men, were grateful to pharmacists and acknowledged the help they received from them. Their discussions that day and on the following day were intended to show in what new drugs and in what new bodies help was to be got for the ills and aches of humanity. He presumed that was the end of their deliberations—the desire to make human suffering less than it was—and to that great goal both medicine and pharmacy were striving forwards, quietly, deliberately, surely, and securely. (Applause.) He wished them every speed in their efforts. He wished them good and crowded meetings, and he trusted that their deliberations in Aberdeen would be beneficial to all concerned. To each and all he bade them welcome, heartily and kindly. (Applause.)

FOR PHARMACY.

Mr. WILLIAM GILES said it was with very great pleasure that he, on behalf of the Local Committee, offered the Conference a most cordial welcome to Aberdeen. They in Aberdeen were highly honoured by having that meeting of the British Pharmaceutical Conference among them. It brought together all grades, if he might say so, of their profession in pharmacy. It brought them together in that outlying corner of the country with the executive officers of the Conference and with the other gentlemen who were more engaged in research-work than they themselves were. They had made arrangements which they hoped would be suitable for their deliberations, and they in Aberdeen trusted that that meeting of the Conference would not be behind its predecessors in the large amount of good and useful work in the interests and the advancement of pure pharmacy. (Applause.)



MR. W. GILES, Chairman of the Local Committee.

The Official Response.

The PRESIDENT said it was a great pleasure to him to acknowledge on behalf of the Conference the most hearty and sincere welcome which had been extended to them that morning. He scarcely knew what to say in regard to the ground which the several speakers had covered. He was afraid time would not admit of his touching on anything like a fraction of the subjects which the Principal had mentioned, but he could assure him that in the humanitarian views which he took of their profession, and in the ground which he claimed they occupied in the public eye, he was not far astray. He (the Principal) was not wide of the mark when he indicated that pharmacists generally were men imbued with a high principle and with humanitarian instincts. The President was sure that the line of thought which the Principal pursued in that direction was one that found ready response and agreement in the heart and mind of every member of the gathering. (Applause.) The Principal took a high view of their calling. They did claim

for it that it had a right to a very high position in the community for the simple reason that it stood closely related to the deepest needs of all sections of the community, and, furthermore, that they were brought into very close contact with science, with religion, and with every one of those great institutions in the land which helped to raise it to its present position, and which stood as the landmark of a highly civilised nation. (Applause.) He would not say more, but content himself with tendering to them, on behalf of the Pharmaceutical Conference, their most hearty and sincere thanks for the welcome which had been extended to them, and more particularly to Principal Lang, speaking as he did on behalf of the University authorities, not merely for the welcome that had been accorded to them, but for the many facilities which they had offered for the proper conduct of the proceedings of the Conference. (Applause.)

Sir Edward Evans (Evans Sons Lescher & Webb, Liverpool) also acknowledged. He confessed that the call to speak had come rather suddenly upon him. He was asked as he came into the hall to say a few words at the close of the proceedings, whereas he was placed early in the programme, and he had also the disadvantage of following one of the most eloquent addresses from the Principal of the University, and one of the most suitable he had ever heard at any of the Conferences he had attended. One of the objects of the Conference was to bring together those engaged in the craft in which they were all more or less interested. They had also with them the ladies who, he believed, attended to look after their husbands and to see that they attended the meetings of the Conference—(laughter)—with due assiduity, and were not enticed away by the other objects of the Conference. He scarcely knew what to state. The President had thanked the Principal for his excellent address, the civic authorities, and also the University authorities for the facilities for holding those meetings. He thought the great object of the Conference was not only the furtherance of examination into the scientific matters that would engage their attention, but would be the great advantages that accrued from their going to different parts of the country and seeing what they were like. It was thirty-eight years since he visited Aberdeen, and he could only congratulate the city on the most extraordinary magnificence of the College in which they were met. It came as a surprise when he emerged from the narrow street to see the grandeur of architecture that was displayed in that noble building. That in itself was an advantage to all of them. He was glad to see that the country generally was waking up to the necessity of a high University training. The city to which he belonged—Liverpool—had a very excellent University, and it was growing in strength and numbers, and other great cities were taking the matter up, but premier in beauty must be the noble University in which they held that meeting. He thanked most cordially the Principal for his address, and the authorities for the kind welcome given them. (Applause.)

Who were there.

Adamson, W. S., Mrs. and Miss, Nottingham.
Alcock, F. H., Birmingham
Alexander, J., Waterloo
Alexander, W., Banff
Anderson, D., Aberdeen
Ashton, F. W., Croydon
Barlow, A. H., Manchester
Bateson, Rev. J. S., Manchester
Bayne, Thos., and Mrs., Edinburgh
Beaumont, W. L., Edinburgh
Bennett, R. R., London
Blackburn, A. E. H., Manchester
Board, J. H., Liverpool
Bonner, A. C., Aberdeen
Boorne, H. E., Bristol
Bowis, W. J., Nottingham
Branson, F. W., Leeds
Bremridge, R., London
Brown, W., Glasgow
Bruce, A. L., Aberdeen
Burrell, Thos., Montrose
Burton, H., Birmingham
Campbell, D., Aberdeen
Cardno, R. C., Aberdeen
Care, H. B., Joppa
Carr, P., and Mrs., Sheffield
Chapman, R. S., Donegal
Christie, R. A., Glasgow
Clague, T. M., Newcastle
Clarke, F., London
Clarke, R. F., and Misses, Gravesend
Clayton, C., Oxford
Cleworth, J., Manchester
Coates, J., Edinburgh
Collie, J., Peterhead
Cook, H. F., Cambridge
Coull, G., Edinburgh
Cowie, W. B., and Mrs., Edinburgh
Craig, jun., A., Aberdeen
Crossling, F., Aberdeen
Cummings, W., Dundee
Currie, W. L., Glasgow
Daniels, M., London
Davidson, A., Montrose
Dey, A., Edinburgh
Dolbear, J., Oxford
Dott, D. B., Musselburgh
Duncan, W., Edinburgh
Duncan, J. D., Aberdeen
Duncan, J .W., Aberdeen
Evans, Sir E., Liverpool
Evans, J. E. H., Liverpool
Finnemore, H., London
Foggan, G., Newcastle
Foster, J., and Mrs., Glasgow
Fraser, A., Forres
Gibb, J. P., Edinburgh
Gibson, W. J., Mrs., and Miss, Belfast
Gibson, Miss A., London
Giles, W., Aberdeen
Gilmour, J. P., Glasgow
Glyn-Jones, W. S., and Mrs., London
Goodall, F. C., London
Goldthorpe, A., London
Grant, J., Bieldside
Gray, A., Aberdeen
Gray, J., and Mrs., Dundee
Greig, J., Edinburgh
Grier, J., Manchester
Hall, R., Woodside
Hare, C., Birkdale
Harkness, J., Edinburgh
Harley, T., Perth
Hay, W. F., and Miss, Aberdeen
Hearn, J., Hitchin
Hewitt, S., Ashton-under-Lyne
Hill, J. R., Edinburgh
Hinrichs, A. C., Greenock
Horne, A. R., Aberdeen
Howalls, J., and party, Ipswich
Howard, D. L., Stratford
Howie, W. L., London
Hughes, W. G., Manchester
Hunter, R., Aberdeen
Hunter, W.W.,Fraserburgh
Innes, J., Ayr
Ironside, J., Inverurie
Jackson, J. E., and Miss M. A., Stirling
Johnston, J., Aberdeen
Jones, E., Hanley
Jones, E. E., Brighton
Kay, J. P., Aberdeen
Kennet, J. N., Weybridge
Kennet, jun., Weybridge
Kerr, C., Dundee
Kidd, J. C., Manchester
Leslie, R., Aberdeen
Lindsay, R., and Mrs., Peebles
Lunan, G., and Mrs., Edinburgh
MacEwan, Peter, and Mrs.
Macfarlane, M., Forfar
McGregor, G. M., Ellon
McGregor, W. J., Ellon
McMurray, J., Helensburgh
Mackie, A., Culter
Mair, W., Edinburgh
Marr, W., Aberdeen
Martin, N. H., Gateshead
Martindale, W. H., London
Merson, G. F., and Mrs., Kilmarnock
Milne, A., Maud
Milne, P. D., Aberdeen
Mitchell, D., Inverness
Naylor, W. A. H., London
Needham, T., Huddersfield
Ness, W. A., Aberdeen
Nicholl, J. W., Belfast
Noble, H., Newcastle
Parsons, W., Kent
Paterson, Jas., Aberdeen
Peck, E. S., Cambridge
Pennie, W., Peterhead
Pidd, A. J., and Miss E., Manchester
Poole, J., and Mrs., Birmingham
Procter, H. R., London
Rees, R. P., and Mrs., Glamorgan
Reid, W., Aberdeen
Reith, J. R., Aberdeen
Righton, J., Southport
Ritchie, D., Aberdeen
Robinson, R. A., London
Robson, J. J., London
Ross, D., Aberdeen
Russell, J., Dundee
Russell, J. A., Greenock
Rutter, C. T., London
Savage, F. C., Leeds
Sayer, E. C., and Mrs., Ipswich
Shand, A., and Miss C., Salterton
Shearer, J. A., Aberdeen
Shepherd, G. J., Aberdeen
Shepherd, J. W., Mrs., and Miss, Settle
Shepherd, W., Aberdeen
Silson, R. W., and Mrs., Bradford
Simpson, C., Aberdeen
Simpson, G., Aberdeen
Smith, Fred., and Mrs., London
Smith, F. A., and Mrs., Birmingham
Smith, J., Dublin
Solomon, A. H., London
Spence, Jas., Aberdeen
Stephenson, T., Edinburgh
Steward, J. A., Worcester
Strachan, A. L., Aberdeen
Sutherland, J. W., Glasgow
Symmons, —, Torquay
Taylor, H., Torphins
Tocher, G. A., London
Tocher, J. F., Peterhead
Tocher, J. W., Peterhead
Tocher, R., Glasgow
Turner, D., Singapore
Walker, Jas., Ellon
Want, W. P., and Mrs., London
Weir, A. S., Kemnay
Weld, C. C., Edinburgh
Whatmough, W. A., London
Whigham, R. L., London
White, E., London
White, T. W., Glasgow
Whyte, J. S., Arbroath
Will, R., Aberdeen
Williamson, L., Newcastle
Wilson, W. P., Haddington
Wright, R., and Mrs., Buxton

Letters of Regret.

The President intimated that he had received letters of regret for absence from Dr. Attfield, Mr. Rymer Young, Mr. T. Tyrer, Mr. S. R. Atkins, Mr. Druce, Mr. Idris, Mr. Payne (Belfast), Mr. Laidlaw Ewing, Mr. David Hooper, Mr. H. Wyatt, Mr. Farr, Mr. Gowen Cross, Mr. Ransom, Dr. Symes, Mr. Worfolk, Mr. H. W. Gadd, and Mr. S. Taylor. He read Dr. Attfield's letter to Mr. Peck, in which he said that neuritis and insomnia prevented him being present at the meeting, although he longed to be present at yet another meeting and to visit Scotland once more. Mr. Rymer Young (President of the Pharmaceutical Society) was prevented by private matters from leaving home.

The way was now clear for the President's address, and Principal Marshall Lang rose to shake hands with him before leaving to resume his official duties. All present stood up as he left the platform.

British Pharmacy: Past, Present, and Future.

Being the Presidential Address by Mr. R. Wright, Ph.C., F.C.S., to the British Pharmaceutical Conference.

It is with feelings of the greatest pleasure, chastened with others of the deepest humility, that I rise to address you this morning. I shall not ask for your indulgence, seeing that my life and my talents—such as they are—have been devoted unstintedly to pharmacy since the day, now more than thirty years ago, when, as a youth fresh from school, I entered upon a period of apprenticeship to a former Hon. Secretary of this Conference, a man who has achieved distinction in more than one walk of life, as scholar, scientist, and man of affairs—I refer to Dr. J. C. Thresh. Little did I think in those days that the mantle of men like Deane, Hanbury, Redwood, Bentley, Brady, Groves, Schacht, Stoddart, Southall, Reynolds, Williams, Greenish, Stephenson, Benger, Stanford, and Martindale, to mention only the departed, would ever fall upon my shoulders. That such a contingency should have happened is a striking testimony to the fact that work done for pharmacy by an obscure person in the provinces does not pass altogether unnoticed or unrecognised by pharmacists generally, and may serve to encourage some other young men who, without encouragement and with limited opportunities for improvement, are willing to devote their lives earnestly to their calling. Permit me a few words by way of preface to my address, and first let me say that although when I accepted the presidency of the Conference I had not the remotest idea that the meeting was to be held where it is (Peterborough was then mentioned as the probable place of meeting), nevertheless, had I been free to select the rendezvous for myself, Scotland would have been the country and Aberdeen the city of my choice, for it was in Scotland that I first became entitled to the designation of "pharmacist," and the gentleman who conveyed to me the welcome intelligence of my success in the Major examination, the late Mr. J. B. Stephenson, was the President of this Conference when it met in Aberdeen twenty-three years ago. Mention of the departed reminds me that the hand of death continues to remove from among us men of influence and high rank in pharmacy. Pharmacists of the type of the late Joseph Ince and John William Bowen are rare, and their departure from our midst will be noted with universal regret. The former was one of the earliest members of this Conference and acted as editor of the "Year-book," besides occupying the position of vice-president from 1867 to 1872. One of the most modest and unassuming of men, he combined classical and literary attainments of a very high type with exceptional practical ability, and the way in which he could "whip up" a faulty emulsion or deal with a refractory pill-mass would have been a revelation to those among our pharmaceutical candidates who seem to consider it good work to turn out three or four dispensing-items in a more or less passable condition in the same number of hours. Of Mr. Bowen it may be truly said that he was one of Nature's gentlemen. Although contributing little to our proceedings, he was a regular Conference attender, and filled the post of auditor from the year 1902 down to the time of his death. He was a man of fine artistic tastes, a keen botanist, and withal an able pharmacist. By nature quiet and retiring, he had a kindly and genial disposition, and was a most delightful and entertaining companion. He had both read and travelled widely, and when drawn out his conversation revealed a man of cultured mind, of wide range of knowledge, and remarkable powers of observation and reflection.



Mr. R. Wright.

Coming a little closer to the immediate business in hand, permit me to remind you that it is by no means easy to select a subject for a presidential address, particularly one which shall deal with matters of fundamental interest and importance, seeing that these have naturally occupied the attention of, and have been dealt with very fully and completely by, one or other of my predecessors. The natural inclination is to treat upon the subject with which one is most familiar—in my own case, drug-research. This, however, has quite recently formed the subject of two presidential addresses, and I have therefore thought it better, especially in view of the present trend of events, to speak to you simply upon pharmacy as a calling; and if, in inviting you into this field, we find that others have already reaped the harvest, let me remind you that the humble gleaner sometimes picks up some of the finest of the grain.

The Rise of Pharmacy.

It is a truism to remark that man's universal need of medicine has created a universal demand for drugs. It is almost as much a truism to say that in the earliest periods of which history presents us with authentic records, the centuries preceding and succeeding the Christian era, both supply and demand in the islands comprising the United Kingdom were of the rudest possible kind. Primitive records indicate, moreover, that the treatment of disease was primarily associated with an amount of callousness and brutality such as is always found in an ignorant, uncivilised, and unenlightened community when the demands of medicine are reinforced by the tremendous claims and sanctions of a religion based entirely, or nearly so, upon superstitious beliefs.

So far as remedial medicine is concerned, it is tolerably certain that down to the period of the midde ages, there was nothing in the shape of organised and systematic treatment of disease. With the establishment of the Universities of Oxford and Cambridge, however, medical curricula were instituted, along with the granting of degrees in physic, but even after these had long been in existence, medical practice was quite empirical and was associated with superstitions of the most trivial character. Differentiation afterwards began to take place, and in addition to the properly trained physicians, who diagnosed diseases and wrote prescriptions, and of the surgeons—commonly called barber-surgeons—who performed surgical operations, we find mention of the apothecaries, whose duty it was to prepare medicines according to the physicians' directions, and also to attend upon the patients and see that the treatment prescribed was properly administered and applied. Chaucer, in his "Canterbury Tales," written in the fourteenth century, alludes to the Doctor of Phisik, who

> Ful redy had he his apotecaries,
> To send him dragges and his lettuaries.

In time many apothecaries in England took up the practice of medicine on their own account, independently of the physicians. Although without legal warrant for so doing, they not only kept open shop for the sale of simples, herbal remedies, and compounded medicines (many of the latter being marvellous examples of polypharmacy), but also took upon themselves the responsibility of prescribing and giving medical advice. The physicians frequently attempted, but ineffectually, to check these encroachments upon their domain, and even went so far as to open dispensaries of their own, each of which was under the charge of a competent dispenser, and where medicines were supplied to their patients free of charge. This move, however, seems to have met with just as little success in checking the grievances complained of as its predecessors had done.

In Scotland you have not had the legalised apothecary as in England, but it is quite evident that he existed even in this city, and was, moreover, closely related to the practice of pharmacy, for when the Aberdeen Pharmaceutical Association was founded in 1839 it title was "The Society of Apothecaries and Chemists and Druggists." In

Great Britain the rise of the chemist and druggist may be said to date from the beginning of the seventeenth century. At that time almost all the drugs used by the physicians and apothecaries were purchased from grocers, who combined this with a trade in articles of food and other domestic requirements of a more or less miscellaneous character. In course of time some of these grocers seem to have specialised on the drug side of their business, and hence came to be known as drug-grocers or druggists. It is more than probable that among the first members of this class of independent traders, devoting the whole of their time and attention to drugs, were some of the men who had been employed in the free dispensaries established by the physicians in order to circumvent their quondam assistants and subsequent opponents the apothecaries. The immediate causes of the evolution of pharmacy and its establishment as a distinct calling were, I think, intimately connected with the history of the period, and included the rapid growth of the population of the country in numbers and wealth, the tendency even then manifest towards the segregation of the people in large centres, the development of over-sea trade—notably with the East Indies through the formation of the East India Company—which led to the introduction into this country of a large number of drugs, but most of all to the alarming increase in the prevalence of disease—particularly the plague—owing to the total lack of sanitary arrangements both in the towns and villages. Be this as it may, we find that just as the apothecary developed from a mere dispenser of physicians' prescriptions into a fully accredited practitioner, so from among the class of grocers there sprang up a new species of trader who, in addition to being a druggist or dealer in drugs, and a chemist or dealer in chemicals, also followed in the wake of the apothecary and became recognised as a regular dispenser of physicians' prescriptions. The history of pharmacy during the latter part of the eighteenth and the early portion of the nineteenth centuries is almost entirely a record of a prolonged struggle for existence between the chemists and druggists and the apothecaries, the former seeking to establish their claim to recognition as a distinct class or order, and the latter endeavouring to retain in their hands the pharmaceutical portion of their work and also to acquire control over the new section of pharmacopolists. Both these attempts failed in their objects, the failure being due in the first instance mainly to the superior competency and equipment of their competitors, and in the latter chiefly to their inability to secure the support of the physicians (who did not love them) and of the surgeons (who, like the historic personage in Holy Writ, "cared for none of these things"). The ultimate outcome of the efforts put forth by the apothecaries to secure legislative control of the practice of pharmacy was the formation of the Pharmaceutical Society of Great Britain and the consolidation of pharmacy as a distinct calling with a separate corporate existence. The history of this Society has quite recently been made the subject of a very inclusive and complete series of articles by Mr. W. J. U. Woolcock (vide *Pharmaceutical Journal*, vols. lxxvi. and lxxvii.), and it is therefore unnecessary for me to pursue the historical side of the subject further. In a chapter on the progress of the science of pharmacy Mr. Woolcock very appropriately remarks :

> The scientific work relating to pharmacy is epitomised to a certain extent by the labours of the British Pharmaceutical Conference. It is to members of the Conference that we look to ascertain what progress is being made.

The separate story of the rise and progress of pharmacy in Ireland was made the subject of his presidential address by Mr. J. C. C. Payne at the Plymouth Conference in 1899.

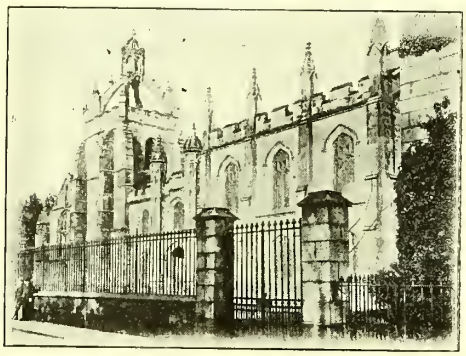
The Province of Pharmacy.

Having sketched in the briefest possible outline the rise of pharmacy, the question may well be asked as to what is its specific and recognised province or sphere. It may safely be said to include within its range the provision and supplying to the public of everything capable of employment for the relief or cure of any ailment or disease to which human beings are subject. As regards drugs, this includes their collection, the investigation of their botanical character and chemical and physical properties and composition, their elaboration and exhibition in the form of galenical preparations of approved type, and their distribution to the public either directly or indirectly. As regards chemicals, it chiefly implies their production and distribution. This definition, of course, does not cover anything like the whole of the transactions involved in the work or business of a pharmacist. On the contrary, it is probable that no calling on its trade side includes the handling of such a wide range of articles actually sold across the counter as ours. Should a member of the public require a little thing seldom wanted (anything from "fiddle-strings to *Fucus vesiculosus*," as the late Barnard Proctor used to say), he is almost certain to apply to the nearest chemist's shop for the article in question. On the other hand, it may be said with perfect truth that the old-fashioned type of country business or store, which behind the sign of "Druggist, Grocer, and Drysalter" concealed several departments—the shop proper usually harbouring drugs and groceries on one side and draperies and hosiery on the other, with other departments in the rear, generally including paints, oils, and colours, often boots and shoes, and sometimes garden and flower seeds—this type, I say, is becoming rare, but is not altogether extinct. During the period to which I allude, a generation or two ago, even in businesses of the better class, and which in the provinces were largely the rule, where many of the principal galenical preparations were made and a good deal of dispensing done, it was a common experience to find associated with these strictly pharmaceutical operations a general trade in miscellaneous family requisites such as tea, coffee, tobacco and cigars, paints, oils, and colours, and in rural districts quite a host of agricultural accessories such as sheep-dip, wheat-dressing, gunpowder and shot, etc. It is worthy of note, however, that in by far the greater number of these old-established businesses a gradual process of excision has taken place under which most of the "extras" more properly connected with the trade of the grocer, provision-dealer, and ironmonger have one by one disappeared and have been replaced by others, such as photography, optics, orthopædy, Röntgen-ray work, and in some cases by analytical work, including milk, water, urine, etc., all of which are developments along scientific lines and far more worthy of a class of men educated as ours has been in those branches of science which work of the kind requires and upon which it is based. Still, none of these is, strictly speaking, pharmacy in the proper acceptation of the term. Do not misunderstand me. While welcoming as a scientific pharmacist the advent and development of these so-called side-lines as being infinitely preferable to those formerly associated with our calling, I think it extremely regrettable that a body of men highly educated and systematically trained in the art and practice of pharmacy proper should find it necessary to step outside their legitimate sphere in order to obtain a livelihood. Our specific province, as the fourth estate of medicine, covers the preparation of remedies for the cure of disease; and it is a pity, though unfortunately it is a fact, that there is not in this field both room for all and work for all the actually qualified and registered pharmacists in the United Kingdom. Work for all there would be, and room for all there might be, could we but secure the control of all remedies supplied to the public, and so render the practice of pharmacy co-extensive with our ideas of what it ought to embrace. From what I have said with regard to pharmacy and its work, I think you will agree with me that it is impossible to overrate or overestimate the importance of our calling. Whether regarded from the standpoint of the public, whose best interests we serve, of the medical profession, with whom we conjointly have to labour on behalf of suffering humanity, or even of the man of science, almost every department of which we lay under contribution for our specific objects and the purposes of our work in life, pharmacy stands out as a calling occupying its own ground, fulfilling its own beneficent purposes, worthy alike of men of the ripest culture and of the highest type of character. Of such a calling, the entire objects of which are benevolent in their scope, and which should appeal to all that is best in a rightly constituted nature, it were surely unworthy to take any but the highest view. I make bold to say that only men of broad

views, of philanthropic principles, and humanitarian instincts can fully and adequately discharge the multifarious duties associated with so honourable an occupation.

The Present Condition of Pharmacy.

We are constantly being told—and the statement is reiterated so frequently that it is coming to be commonly accepted as true—that pharmacy was never in so bad a



King's College, Aberdeen.

Now devoted to Arts, Divinity, and Law. Founded by Bishop Elphinstone in 1494, to which period belong the tower and chapel, here shown. Other buildings date from 1826 to 1870.

condition as it is to-day. It is said that whereas the turnover in an ordinary retail business cannot easily be increased, the profits attached thereto are constantly dwindling, while rents, rates, salaries, and other working-expenses tend to rise year by year. Such assertions in their general application are doubtless true, although there are numerous exceptions to the rule. An impartial inquiry would, I think, show that in businesses consisting of a general trade in patent and proprietary medicines and druggists' sundries, where the pharmacist is so situated as to be exposed to the full force of trade competition on the part of co-operative associations of various kinds, the net profits have shrunk almost to vanishing-point. From the stress of such competition, accentuated as it has been by the rise and rapid progress of that hydra-headed demon the impersonal drug company, so far as it is possible to foresee, the future is not likely to bring any relief. It is useless and worse than useless to repine at our lot. We live in a real world, and have to take the circumstances of life as they are, not as we should like them to be, and to make the best of them. As a body of men called into existence by the Legislature for a special purpose and the discharge of particular duties, we claim the right to supply to the public everything required for the relief and care of disease, and it should be our endeavour to control that supply by all means in our power, while restricting its course as far as possible to the proper channels. Speaking from the point of view not of a pharmacist but of a British subject, I am convinced that it is in the highest interests both of pharmacists and the public that all medicines of whatever kind should pass through the hands of a qualified chemist. Keeping this principle in view, where competition has to be met it should be faced boldly. Whatever is demanded by the sick public should be stocked by the vendor of remedies for their multitudinous ailments, and where a full range of so-called patent medicines (but which I prefer to term quack medicines, for they are nothing else) has to be kept, the rule should be followed of purchasing in the cheapest market and selling when necessary at competitive prices. Meanwhile, let me remind you that in businesses of the average type, with a turnover of from 1,000*l.* to 1,500*l.* a year, and where the trade in quack remedies does not exceed 20 or 25 per cent. of the total, associated with an average amount of dispensing and trade in personal proprietaries, the effect of competition with limited companies and other unqualified traders has not been felt to anything like the same extent. A consideration of the trade side of pharmacy suggests many thoughts, some of them, I fear, not very complimentary to ourselves. For much of the trouble that has come upon us we are, as a body, largely to blame. We certainly should not have had to suffer so much as a class had we not so readily handed ourselves over to the patent-medicine manufacturer and advertiser of every latest cure-all. It may be deemed presumption on my part to lay down rules for the general guidance of pharmacists in matters of trading, which must largely be ruled by mere trade considerations, but it is certainly not conducive to the well-being either of the individual or of the class that he should surrender his freedom and become a mere huckster of other men's wares. Whatever may be said to the contrary, I cannot resist the conviction that whenever a pharmacist in response to a demand on the part of his customer for a preparation which he himself is capable of profitably producing and is free to supply, hands over his counter the product of the brains and hands of another, such a transaction amounts more or less to a confession of weakness, incompetence, or idleness on his part. Please do not misunderstand me. I know too well the difficulties under which many of our brethren labour, of the stern struggle for existence, and of the extreme hardness which characterises modern trade practices in their bearing upon the individual; but when every circumstance has been taken into account, it still remains the fact that there has been and still is far too great a readiness on the part of pharmacists generally to sink their own individuality and become mere distributing agents for irresponsible and too often unscrupulous manufacturers. The serious aspect of the case is that it strikes at the very root of professional pharmacy. The essence of a profession is personal service, personal responsibility, and a personal guarantee of efficiency, and wherever these are lost sight of the cause of pharmacy is to a greater or lesser degree compromised.

Pharmacy—Old and New.

The more serious difficulties with which we are confronted, however, lie in a different direction from those which I have indicated, and affect us in our capacity of producers and distributors of medicines to the public, and also as dispensers of medical prescriptions. As I have already remarked, the duty of the pharmacist includes the collection, elaboration, and distribution of drugs. Formerly the whole of the operations comprised under this head were carried out by the druggist himself. He gathered the plants from which many of his galenicals were made, and personally superintended their preparation, so that every single step



The Court Room, Marischal College.

A remarkably fine piece of local modern work. The College was founded by Earl Marischal in 1593, and is devoted to the teaching of Medicine and Science. The College is the largest granite building in the world.

from field to pharmacy and pharmacy to the public bore the *imprimatur* of a personal guarantee. We can imagine the interest excited in the old pharmacies in the land when the medicinal herbs for the production of green extracts were brought in and conveyed to the laboratory connected with the pharmacy, and there, under the supervision of the master, converted into the required galenical. Those were,

if you please, the romantic days, as they were certainly the heroic days of our calling, and there was in connection with much of the work done a charm and romance which is largely lacking to-day. Personally, one of the most agreeable memories of my life is associated with a period spent in a pharmacy in the South of France where were carried



Union Terrace Gardens, Aberdeen.

The building surmounted by the flag is the Grand Hotel. The Free Library, the United Free Church, and the New Theatre are on the extreme right.

out a greater number of pharmaceutical operations than is customary in this country. I allude to the day when basket after basket of orange-blossoms fresh from the country (for our *pharmacien* boasted his own country seat) were brought in and emptied out upon the tiled floor in readiness for the still. Although more than a quarter of a century has elapsed since then, the beauty of the scene and the sweetness of the aroma still remain as a cherished reminiscence of one of the happiest periods of my life. The progress of civilisation includes both loss and gain—loss frequently to the class and generally to the individual, with gain to the community. As civilisation widens, trials will multiply, and every new departure increases in one way or another personal responsibility without any corresponding individual advantage.

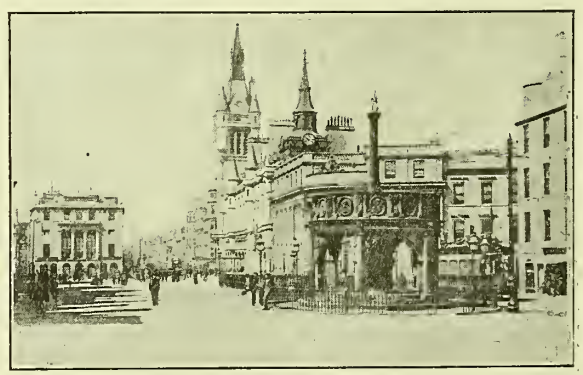
Changes in Pharmacy.

This progress has wrought mighty changes in every direction. Time and space have been well-nigh obliterated, and the whole world is now laid under contribution for our supplies of raw material. From every part of the globe British ships now carry all varieties of raw material, in men and other animals, produce of all kinds, drugs, and (be it not forgotten) diseases. From what we hear and read of the deliverances of men in high places, there seems to exist a fear lest medical men and pharmacists should in the not distant future have to look out for fresh spheres of labour. One of these authorities indeed has drawn a vivid picture of the two establishments standing side by side, in the first of which the children of future generations will pass from standard to standard in the process of intellectual training and their fortification against moral microbes, and in the second will, by treatment with a long succession of selected sera, be rendered immune against all physical disease. I do not, however, anticipate any such issue. The pathologist has not yet succeeded in effectively mastering a tithe of the ills to which flesh is now heir, and it is certain that the present close contact of the inhabitants of these islands with the remotest populations of the globe will mean the introduction of new dieases and varieties of diseases, both in the animal and vegetable kingdoms, to say nothing of the constant evolution which must ever be taking place in many of even the most clearly defined complaints that afflict the people of the United Kingdom. With the lack of the power of personal control at the source of supply the responsibility of the pharmacist is enormously increased. The duty is thrown upon him of verifying his raw material, and for the proper discharge of this duty the whole of his training in the pharmacy and college is pre-eminently qualified to fit him. How serious this duty is every experienced pharmacist knows full well. Of wilful and deliberate adulteration there is doubtless much less to-day than in former times, but accidental admixtures of the true and false are fairly common. Where adulteration is practised it is usually carried out at the source of supply, and is done so systematically as to require the skill of a scientific pharmacist to detect it. In the course of my experience I have met with a fair number of adulterated drugs, nearly all belonging to the accidental group, and one has only to turn to the pages of the journals of pharmacy and to the valuable reports issued by several of the leading drug-houses to note the careful discrimination needed in the selection of drugs for use in pharmacy. With regard to the supply to the public of medicines prescribed by medical men, it may be said, I think, with truth that, generally speaking, this is passing more and more into the hands of the professional pharmacist. Even where the former still continues, either by preference or necessity, to supply medicines to the public, it is becoming very largely the rule for him either to purchase his drugs and galenicals direct from the pharmacist, or to make the latter the medium through which medicines pass to his patients. It is true that in the medical profession are many men whose sense of dignity is not sufficiently high : they are either needy enough or mean enough to eke out a livelihood by supplying to their patients not only the medicaments in the shape of mixture, pill, or what-not, but also a full list of surgical appliances and sundries, such as syringes, sprays, bandages, and a host of other requisites, for which doubtless full prices are charged, and, let us hope, always obtained. This is the type of man who rings up the chemist in the middle of the night for some article which he needs but is out of stock of, or calls after hours for a freshly prepared injection of ergotin for a very special case. The proper sphere of medicine lies in the diagnosis of disease and its treatment, including the prescribing of remedies—that of pharmacy in the compounding of drugs and the dispensing of medicines.

While on the subject of the relationship existing between the members of the medical and pharmaceutical professions, permit me to draw your attention to one or two very marked tendencies of the times with regard to the practice of medicine which must be a cause of serious concern to all who have the welfare of the kindred professions at heart.

The Sale of Patent or Quack Medicines.

The first of these is the alarming growth of the trade in so-called patent medicines in the United Kingdom. Statistics show that the annual value of stamped medicines sold is increasing at an enormous rate. The amount ex-



Union Street from the East.

In the foreground is the Market Cross. The Municipal Buildings are indicated by the Scotch Baronial tower. Exchequer Row is on the extreme left.

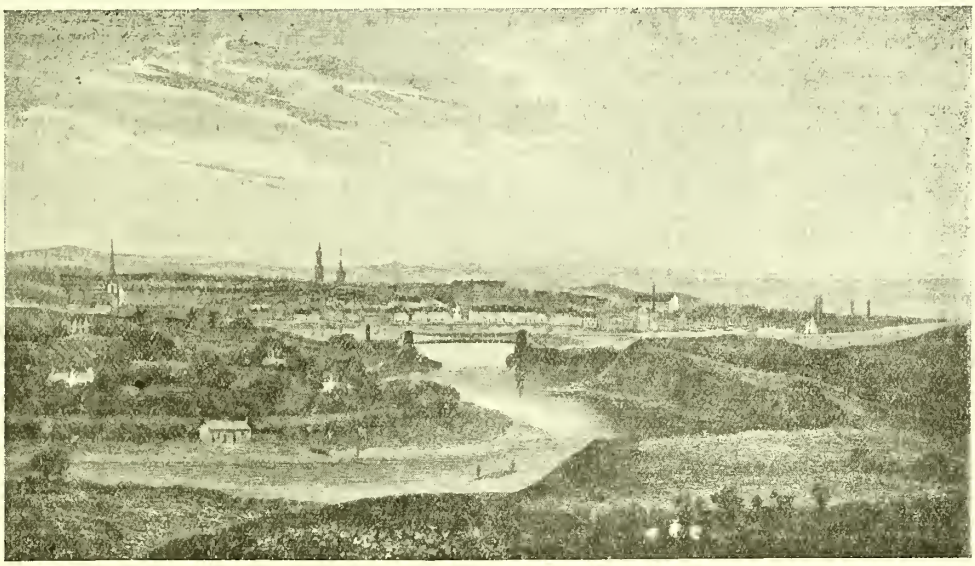
pended in remedies of this description in the years below mentioned was approximately as follows :

	£
1860	350,000
1870	580,000
1880	1,080,000
1890	1,740,000
1900	2,310,000
1907	2,620,000

Reckoning the population of the British Isles at about

23,000,000 in 1860, and 39,000,000 in 1906, it follows that the amount spent in patent medicines per head is now about five times as great as it was half a century ago. Figures such as these command our most serious consideration. After making full allowance for the increased spending capacity of the masses, they prove conclusively that, notwithstanding the wide diffusion of knowledge, the spread of education, and the raising of the standard of intelligence among the people, the appeal of the quack and the charlatan to the credulity of the public meets with a readier response than ever. Judging from the character of the advertisements which appear in the public Press, and the results accomplished, it would seem as if the secret of success lay partly in the throwing round the origin of the article advertised the glamour and romance of the marvellous, partly in a most cunningly devised appeal to all the weaknesses of mind and body to which frail mortals are subject, but chiefly, I think, to the lavish expenditure of money and the variety and persistence of the methods of advertising employed in order to secure the end in view. Let anyone take up a daily paper or public journal of any kind and study a few of these quack advertisements, and he will find that the main object in almost all is to produce in the mind of the reader, either by suggestion or by means of a highly exaggerated description of the symptoms supposed to characterise a certain disease or combination of diseases, the idea that he is suffering from this particular ailment of which the remarkable remedy advertised is an absolutely certain cure. The entire system is nothing more nor less than a gigantic and most monstrous imposture from beginning to end, and reminds one very forcibly of the ancient legend quoted with such conspicuous success by Macaulay in one of his celebrated essays, wherein the three rogues, hearing of the pious Brahmin's vow that he would offer a welcome sacrifice to the gods in the shape of a sheep of the sweetest flesh and softest wool, managed by a most ingenious system of deception not only to persuade him that his white-fleeced sheep was a dirty dog, but also to palm off upon the simple-minded pietist a filthy cur, the offering-up of which as a sacrifice so enraged the gods that they smote him with a sore disease in all his joints. This legend illustrates with the utmost nicety and precision the success which may attend the valuable art of lying, associated with persistent puffing, which is the very essence of the system of quackery with which we are now dealing.

If it were possible to set on foot an impartial inquiry into the mischief wrought by this class of remedies, it is certain that some startling facts would be brought to light. That it must be very considerable goes without saying when we consider that many of them contain very potent drugs, and some of them poisons of a very virulent and dangerous character. The case is still fresh in our minds of a largely advertised remedy with a high-sounding title, which was put forward as a cure for over fifty diseases, and was proved to consist of a simple solution of sulphur dioxide. A gigantic evil of this description, which may be characterised as impudence and cupidity trading upon ignorance, surely demands a drastic remedy. What is the remedy and how can it be applied? If the torrent of the evil cannot be entirely checked in its course, what can be done to arrest its flow? In the first place every pharmacist should set himself steadfastly against such quackery, and refuse to countenance it in any shape or form. Something can be accomplished in this way, though possibly not much, for what the public demands in the shape of medicine we ought, I think, unquestionably to supply. The real and only effective remedy lies with the Legislature, and in securing repressive legislation the initiative should be taken by the General Medical Council, seeing that the matter concerns the members of the medical profession more closely than our own. What direction should legislation on the subject take? The production and sale of such remedies should be submitted to much severer restrictions than is the case at present. The outlets by means of which they find their way to the public should be limited by raising very considerably the cost of the patent-medicine licence. A Board of Control, consisting largely of recognised authorities in the different branches of medicine, should be constituted, to which it should be made compulsory for the form of every secret remedy to be submitted for registration before permission were given for its public advertisement or the use of the *imprimatur* of the Government stamp. Personally I am confident that in the not very distant future much more than this will be demanded, and that the custom which now obtains in the United States and in some Continental countries will be followed in our own—viz., that the label on every bottle shall be required to state the volume of alcohol above the percentage required to preserve vegetable extracts, and the proportion of any scheduled poison contained in the medicament. Furthermore, I anticipate the time when the label on every box or bottle of an advertised medicine shall be required to show all the active ingredients, though not necessarily the proportion therein contained. The demand is based upon considerations of the public safety and the good of the commonwealth, for where the public is unable to form the slightest idea as to the nature and composition of an advertised remedy it is clearly neces-



Aberdeen from the West in 1830.
The third spire from the left is that of the East and West Churches.

sary that some steps should be taken to prevent its health being subjected to dangers of all kinds by the nefarious practices of any and every irresponsible and unqualified adventurer who chooses to foist his wares by false pretences upon them. It surely does not need more than a moment's consideration to see the absurdity of the position and the necessity for additional restrictions in the direction I have indicated. The law demands qualifications of a high order from the registered medical practitioner who treats disease and prescribes remedies; it insists upon the thorough training, education, and examination of those who wish to qualify as retailers and dispensers of drugs, and imposes penalties upon such as fail to compound medicines according to the standard set up by the statutory authority; yet allows the unfettered and uncontrolled supply to the public of medicines of the composition of which little or nothing is known, to an extent which can only be described as enormous.

I have never yet been able to understand why the proprietor of a quack remedy should be allowed to purchase immunity from the disclosure of the formula by handing over 15 per cent. of his profits to the Government. Further, while holding strongly to the opinion that the taxation of medicines in any form in inherently wrong and unjustifiable, I am just as firmly convinced that any system of taxation under which registration of the formula can be avoided in those cases in which, above all others, it ought, in the public interest, to be demanded and enforced, is chronically, radically, and essentially bad. I am aware that there is another side to all this. It may be said with perfect truth that no one is obliged to purchase remedies of this class, however speciously advertised and put before them, and that it conflicts with all our accepted ideas of individual and corporate freedom to interfere with the free sale to the public of any commodity whatever. On the other hand, we know that such is the weakness and credulity of human nature that just as a drowning man will clutch at a straw, so a person who is suffering acutely will in desperation and under the influence of physical or mental torture, purchase and take the first professed remedy for his disease which presents itself to his notice.

Counter-prescribing.

I am now come to another difficult and delicate question, one which closely affects us in our relations with the members of the medical profession—viz., the question of counter-prescribing. This, though technically a matter between medical men and pharmacists, is essentially only one branch of the much larger question as to how far it is legitimate for irresponsible and unqualified persons to prescribe and recommend medicines for other people. The head of the household frequently doses the members of his family, sometimes much against their wishes, and most of us, I suppose, have had experience of the mutual friend, homœopathist or allopathist (usually the former), who, with a more or less superficial knowledge of drugs and disease, nevertheless persists in the idea that his chief mission in life is to safeguard the health of his friends and prescribe for their ailments. These proceedings are regarded as perfectly legitimate, because inspired by the spirit of charity and benevolence, although, strictly speaking, such prescribing on the part of persons who have very little knowledge of either drugs or diseases is not so safe as prescribing by a qualified chemist, who can at least claim to know more about drugs than either the general public or the medical man. In the latter case, however, there is always a danger lest from mercenary motives he should be tempted to transgress the laws of prudence and common-sense, and to administer remedies in cases with which only the trained practitioner should deal. Conduct such as this is on all-fours with that of the charlatan whose *modus operandi* we have just been holding up to reprobation, and is deserving of the severest censure. In fact, wherever a member of the Pharmaceutical Society has been proved to be in the habit of prescribing indiscriminately, the utmost penalty which the Council of the Society has the power to inflict upon a member found guilty of dishonourable conduct is not too heavy a punishment. Short of this, however, we claim that the counter-prescribing of simple remedies for simple ailments is quite in harmony with the general fitness of things, and an educated and conscientious pharmacist, knowing by experience the difficulties often met with in diagnosing even "simple" ailments, will in any case of doubt at once draw the line and refuse to prescribe.

I mention this subject because the question has recently been discussed at meetings of the General Medical Council, and in November last a strongly worded resolution was brought forward by Dr. Langley Browne, in which he advocated the appointment of a committee to draft a Bill containing such amendents of the Medical Acts as would make it a penal offence for any person other than a qualified practitioner in medicine or surgery to practise medicine in the United Kingdom. After a full discussion this resolution was withdrawn and an amended one carried to the effect that a committee be appointed to ascertain what legal provisions exist in the Colonies and in other countries for the suppression of unorthodox practice, and to consider what steps should be taken to secure similar legislation in the United Kingdom.

It is, I know, quite unnecessary for me to assure the members of the medical profession that all pharmacists worthy of the name are just as anxious as medical men themselves to put a stop to anything savouring of humbug and quackery. It is very doubtful whether the evil exists to any appreciable extent except in quarters where no dispensing is done, and the cure lies largely with medical men themselves. In his presidential address delivered to the Conference in this city in 1885 Mr. Stephenson alluded to the fact that in Scotland the differentiation between the callings of medicine and pharmacy, resulting in the transference of all strictly pharmaceutical work to the pharmacist, was more pronounced and complete than in any other portion of the United Kingdom. He also stated that whenever the transference of the dispensing from the doctor to the druggist took place it must have been very rapid and complete. I understand that this ideal state of affairs still obtains here, and I trust that the day will soon dawn when a "consummation so devoutly to be wished" may become a universally recognised rule throughout the length and breadth of the land. Meanwhile let me repeat that where much counter-prescribing is carried on it is invariably the result of the lack of dispensing. "Necessity knows no law," and the law of necessity—*i.e.*, the need of providing bread and butter for the family—will quickly knock on the head all abstract rules of arrangement as between medicine and pharmacy. There is another aspect of the same question which we may now proceed to consider briefly and from a somewhat different standpoint. We hear a great deal from the medical side of the danger arising to the public from the prescribing of remedies by unqualified practitioners, but what is to be said of the nature and quality of the dispensing carried on in the dispensaries and surgeries of these realms? Who is the more culpable—the chemist who prescribes drugs of which he knows more than anyone else for diseases and ailments of which he knows little, or the doctor who for complaints which he is supposed to be able to diagnose correctly administers drugs of the proper methods of exhibiting which he is totally, or almost totally, ignorant? It appears to me that both are culpable, but of the two I think the latter is the greater sinner, for the simple reason that in case of misadventure he can, as the former cannot, escape the consequences of his mistakes.

An Incident

occurs to my mind which brings out very clearly the point I wish to illustrate and enforce. Given the example, it is a comparatively easy matter to educe the rule. About twenty years ago a prescription was put into my hands to be dispensed containing 6-minim doses of Scheele's prussic acid. The prescriber lived within 200 yards of my house, and I waited upon him with a view to getting the supposed error corrected. The gentleman in question did not welcome my interference, and informed me in somewhat forcible language that it was his business to prescribe and mine to dispense. Luckily no evil results in that particular instance accrued. It happened, however, a short time afterwards that the same medical man himself dispensed a cough-mixture containing chlorodyne for a young

man with whom I was acquainted. The mixture was supposed to contain 2 fluid drachms of chlorodyne, representing a grain of morphine hydrochloride, the size of the bottle being 8 oz. Of this, two tablespoonfuls was directed to be taken every two or three hours. According to the evidence tendered at the inquest the patient had two doses the same night and a third the next day. After taking the latter he became comatose, and died the following morning. The evidence of a second medical man summoned to the case went to show that death was due to narcotic poisoning. The Coroner himself was a medical man, and his professional brother got off "scot-free," and without either a reprimand or caution. The bottle containing the remainder of the mixture was produced at the inquest, but no analysis was considered necessary. One may imagine what would have happened had the case been one of counter-prescribing by a chemist!

This incident aptly illustrates my point and brings out the absurdity of demanding the qualification by examination of the pharmaceutical dispenser, while leaving medical men free to employ whomsoever they please. If dispensing merely meant the filling of a bottle with liquid, of a pot with ointment, or counting a number of pills into a box, the thing would be a matter of comparatively small importance, but if it represents, as it undoubtedly does, the most important branch of scientific pharmacy, it is certainly essential



The Bathing Station, Aberdeen.

After visiting the Rubislaw Granite Quarries on Tuesday afternoon, the Conference party drove here for tea. The Baths are splendidly equipped, and the bathing in the Ocean is superb. Byron is supposed to have learnt to swim in this neighbourhood.

for the safety of the public that the work should be entrusted to responsible and thoroughly qualified men. Considerations such as these acquire increased force in view of the trend of medical training to-day. The old system of apprenticeship in medicine had the same value to the medical as it now has to the pharmaceutical student, in that it taught him to use both his brains and his fingers, and helped to make him a practical man. I well remember hearing the late Sir Henry Acland at the Oxford Conference bear emphatic testimony to the great benefit he had derived from the practical training received by him in pharmacy and chemistry from two distinguished members of our calling—the late Peter Squire and J. Lloyd Bullock. Now everything is changed. Not only has the period of pupilage been abolished, but in the London Conjoint examination, at any rate, there is no examination at all either in dispensing or practical pharmacy. The term "practical pharmacy" as applied to this subject is simply a misnomer, for it merely includes the recognition of about a hundred drugs and chemicals, and a knowledge of the character, composition, and doses of the chief medicines contained in the British Pharmacopœia. True, there is a prescribed curriculum in practical pharmacy which may be taken anywhere, either with a medical man, a pharmacist, or in any hospital or dispensary devoted to teaching. The irony of the situation lies in the fact that even in hospitals where no qualified pharmacist is employed (and there are many such) the Medical Board of such hospitals would be quite prepared to sign up students who took their pharmacy course, although the teacher himself was unqualified, and the Conjoint Board would accept the certificate. It might be supposed that this neglect of the study of pharmacy by medical students would have been to the advantage of all pharmacists, but I am certain that under present-day conditions the effect has been quite the opposite. For what is the result? Simply this—that the knowledge of pharmacy acquired by the great majority of medical students is practically *nil*, and that in actual practice such men are far more dependent than their predecessors were upon outside help in that part of their work which is of a more or less pharmaceutical nature. Hence the demand—too readily met, alas!—for

Factory-made Preparations.

tablets, pills, cachets, and capsules, which only need counting out, concentrated mixtures which merely require dilution with water, and all other preparations in the same way. The mischief, unfortunately, does not end here, for many medical men carry this illegitimate system of dispensing into their regular prescribing, the result being not only to divert much of our legitimate work into other channels, but, what is perhaps more degrading still to the true pharmacist, to convert the dispensing of many prescriptions into a purely mechanical and irresponsible operation. I remember some time ago a pharmaceutical friend giving me two amusing illustrations of the extent to which this practice is in vogue, and the lengths to which it is carried in some parts of the country. Being called upon to fill a prescription for half-a-dozen antibilious pills of quite ordinary composition, but to which some particular initials were attached, and which were not at hand, and knowing the prescriber well, he rang up and suggested that he should be allowed to prepare them himself. The reply of the medico was crushing and complete—"You may prepare one or two of the pills for the use of the patient until a supply of the others can be obtained." This is surely carrying granite to Aberdeen with a vengeance! On another occasion this same chemist received a prescription for capsules or tablets (I forget which) containing ferrous carbonate with a little arsenious acid. Being unable to meet with them in the town, the capital idea occurred to him of offering to prepare the same combination in pill-form. He accordingly wrote the prescriber making the suggestion. The required permission was obtained (grudgingly), the outcome being that when a further supply of the medicine was required he found that as the result of his "capital" idea the prescriber had inflicted upon him the "capital" punishment of instructing his patient to go elsewhere in order to get the original prescription dispensed. Another proof, if proof were needed, that men who stand up for their rights are in danger of getting knocked down for their impudence. I have personally had experience of a patient being kept waiting for three days for a few one-grain doses of quinine sulphate, simply because the special and particular brand of tablet was not available. Could anything more utterly absurd be conceived than this? Let me not be misunderstood. Our complaint is not against the legitimate work of the wholesale houses, whether in the matter of galenicals or anything else, nor against other high-class firms, who, as the result of a patient research and the expenditure of a vast amount of time, labour, and money, succeed in producing perfected preparations of any description. The grievance is that we should be compelled to go to any special firm in this country, or to any particular foreign country, for quite ordinary combinations of drugs and chemicals which we are able to produce just as well or better ourselves. Why, for example, send to America for a simple solution of chloral and bromide with Indian hemp and henbane? What has been urgently needed for a generation past—and now, thanks to the Council of the Pharmaceutical Society (and particularly to Mr. Carteighe), we have got it—is a collection of authoritative formulæ for preparations in common use in pharmacy; preparations not contained in the British Pharmacopœia, but which are frequently prescribed by medical men, and which can and ought to be dispensed by any pharmacist. It is pretty generally admitted that the need of such a book was only partially met by the Conference Formulary. This was good in its way, but was not nearly comprehensive enough for the purpose. The reception of the "Codex" has been highly favourable, and there is little doubt that in course of time, when medical men become familiarised with its con-

tents, the effect will be to restore to pharmacists much work in practical pharmacy which has lately been passing quite unnecessarily into other hands.

Pharmacists and Poisons.

This review of the present condition of pharmacy could not be considered complete without some reference to the burning question of the day—viz., the subject of poisons. Let me remind you that the Pharmacy Act of 1868, which first made it compulsory for all chemists and druggists to undergo examination, and first restricted the use of certain titles to the persons thus examined—titles which (notwithstanding the fact that owing to a palpable flaw in the above-mentioned Act they have been appropriated by associations of unqualified persons) not even the President of the Chemical or the Royal Society could use without securing the necessary qualification—is connected directly, though not solely, with the sale of poisons. Recognising that their indiscriminate sale constituted a grave public danger, the Legislature called into existence a class of trained, educated, and competent men, whose duty it is to safeguard the public by supervising their preparation and distribution. The duties and responsibilities associated with the storage and sale of these articles are of a somewhat onerous character, and in many cases the remuneration attached therto appears quite out of proportion to the trouble and expense involved. This statement does not apply to the articles included in Part II. of the schedule nearly so much as to those contained in Part I., under which there is compulsory registration of every sale in the poisons-book. A glance through the list of these articles shows that they comprise the most deadly of the poisons, and every one, with scarcely an exception, has been employed at one time or other for deliberate poisoning or other criminal purpose.

It appears to me that the statutory position of the chemist and druggist in regard to the sale of these substances is to all intents and purposes that of a Government agent. In other words, his duty is similar to that of the Excise officer or supervisor in relation to the distribution and sale of such an article as methylated spirit. The intent of the Legislature, so far as I can make out, is that in cases where any drug or chemical contained in Part I. of the schedule has been used for a nefarious purpose, the chemist and druggist should without any great difficulty be able to trace the poison and help the police to lay their hands upon the criminal. It may be said that the regulations appertaining to the sale of many of these drugs are too rigid, and that some more elastic rule should be framed under which they might be more freely dispensed to the public when required for *bonâ-fide* employment as medicines. It has been suggested, for instance, that a clause should be added to the Poisons Act under which chemists should be allowed to sell these articles in safe medicinal doses. Now, even as the law stands, I think it is clear that under Section 17 of the Act of 1868 we have a right to dispense any medicine containing scheduled poisons apart altogether from the existence of a medical prescription, providing that they are actually dispensed as medicines, and that the ingredients of the medicine, together with the name and address of the person to whom they are delivered, are entered in the prescription-book.

It is, however, unnecessary for me to elaborate this point, which has been carefully dealt with in this city and elsewhere in Scotland during the past year, but I cannot refrain from expressing my opinion that the principle which should guide the pharmacist in all such transactions is that the widespread distribution of strong poisons to the public is not an advantage to the community, and it is therefore his duty to discourage it. The temptations to wrong-doing are just as great as ever they were, and to scatter broadcast such things as pills, tablets, etc., containing strong doses of powerful poisons such as some of these do contain is to play straight into the hands of the would-be evildoer. It is, of course, impossible to form any idea as to how much secret poisoning is actually taking place at any given period, but it is a notorious fact that in almost every instance in which murder by means of arsenic has been brought home to a criminal it has subsequently been found that several human lives (in one case as many as twenty) have been sacrificed before suspicion had been aroused. Mr. Idris has recently drawn special attention to several of these cases. With regard to the ordinary retailing of poisons, we are as a body placed in a position of very serious responsibility—a responsibility far greater than the general public or even medical men adequately realise. For members of our own profession, who have to face this responsibility every day of our lives, it is difficult to understand the tremendous fuss made in the Press over cases in which pharmacists have been punished for dispensing a few perfectly safe medicinal doses of a scheduled poison without observing all the rules and regulations that the law demands. It would, I think, open the eyes of the public if they were aware of the unceasing care and unvarying vigilance with which the ordinary transactions in poisons have to be watched, and in default of which results, sometime of the most tragic description, follow upon the slightest relaxation of the restrictions imposed and the precautions which have to be observed in connection with them. In looking back upon the thirty-four years which I have spent in pharmacy, I have often wondered whether the career of every pharmacist of equal length has been as rich—painfully rich—as mine, in unfortunate incidents connected with the retailing and dispensing of poisons. Time will not allow me to present a record of my experiences in this direction, interesting though their recital might prove. It will suffice to say that they include one case of criminal poisoning and two of suicide, besides several others of so extraordinary a character that they would find a much more suitable setting in the realistic pages of a sensational novel than among the prosaic records of the proceedings of this Conference.

These were all instances in which fortuitous circumstances upset the results of personal care as well as strict adherence to law, and I have good reason to suppose that they are experiences common to the whole body of pharmacists.

The moral of such happenings is twofold. First, that any influence which pharmacists possess should be employed not in assisting the popular demand for powerful remedies, but rather in the direction of limiting their distribution as far as possible, except under strict medical supervision. More particularly is it our duty to do all in our power to oppose and arrest the steadily growing fashion of self-medication on the part of the public with remedies of great potency. It is no uncommon thing nowadays for nurses, and even members of the public, to ask for bottles of a hundred pills or tablets containing scheduled poisons, and to express great surprise when the order is refused. The duty of the pharmacist is, however, obvious. It will be in the memory of many of us here that in one celebrated criminal trial it was shown that a few arsenical fly-papers, soaked in water, would yield a solution strong enough to poison a human being, and it is largely in view of eventualities such as this that we retain our title and our position in the commonwealth. The second deduction is that where even under the present stringent restrictions as to distribution the danger to the public is so great, it would be a most unwise step on the part of any Government to open wider the door or to multiply the outlets through which they find their way into use. It is for this reason mainly that I view with disfavour the proposals of the present Government with regard to the licensing of unqualified persons for the sale of poisons for use by agriculturists and horticulturists, and should these proposals become the law of the land, as appears probable, I venture to predict that for the boon (if boon it be) conferred upon these classes the public at large will have a heavy price to pay. To any further concessions in this direction the attitude of all pharmacists should be one of the most strenuous and uncompromising opposition.

The Present Position of Pharmacy.

How does pharmacy stand to-day, and what are the prospects for the future? The reply to the first question must be, I think, that while, on the one hand, there has been a decline of trade in the thousand-and-one incongruous articles formerly associated with our calling, there has been, on the other hand, a steady growth and progress on the purely pharmaceutical side of it. The great bulk of what has departed could very well be spared as

being altogether incompatible with pure pharmacy, and its loss will be viewed without regret. The development of scientific pharmacy during the past quarter of a century has been truly remarkable, and has caused not merely a levelling-up of the standard of the education given to pharmaceutical students in the colleges, but also a raising of the standard of knowledge required in the Minor and Major examinations of the Pharmaceutical Society, more particularly in science. Of the latter I think you will agree we cannot have too much, provided that it has a direct bearing upon the lifework of the candidate. A corresponding improvement is noticeable in the character of pharmaceutical literature and in the contributions to the evening meetings of the Pharmaceutical Society and the annual gatherings of this Conference. If anyone doubts the accuracy of these statements let him take the trouble to institute a careful comparison between the present and the past, and he will then, I think, be disposed to agree with what I have stated. It is not that we have more of abstract science, but that there has been a tremendous gain in its practical application in pharmacy owing to the adoption of the experimental method in all pharmaceutical work. Moreover, it cannot be gainsaid that, generally speaking, the pharmacists of to-day possess in greater measure than their predecessors the confidence both of medical men and the public. The Conjoint Board would never have dropped its examination in dispensing had it not been satisfied that this particular branch of work could safely and properly be left in the hands of the pharmacist. The development of pure pharmacy can be traced in several ways, but is, perhaps, best illustrated by the rapid growth in the size of a work like the "Extra Pharmacopœia." On reference to the successive editions of this book, I find that the first edition, published in 1883, had 313 pages of matter and 1,600 items in the index; the 1892 edition had 524 pages and 3,500 items in the index; while the last edition, published quite recently, has 1,204 pages and 10,000 items, duplication of the latter being carefully avoided. These figures bear eloquent testimony to the fact that whatever has been lost in pharmacy during the past two decades, the opportunities of pharmacists in the realms of pure pharmacy have enormously increased.

The Future of Pharmacy.

And what of the future? The future material prosperity of pharmacists depends mainly upon their harmonious co-operation with the members of the medical profession, and this will be largely determined by the attitude ultimately assumed by the former towards counter-prescribing and illegitimate medical practice, and by the latter in relation to the dispensing question, the use of factory-made preparations, and, lastly, to drug-companies and other co-operative supply associations. Apart from this, however, it may be predicted with absolute certainty that the future well-being of pharmacy depends entirely upon the self-denying efforts of pharmacists themselves.

In the brief sketch of the rise of pharmacy which stands in the forefront of this address it was shown that the present position of pharmacy had resulted from the operation of natural processes, the working of which could be traced with almost scientific precision. The consolidation of pharmacy has led to the evolution of a fixed type of professional man, whose environment prevents further development in the direction of medicine. What, then, remains for us? This—that we take care not merely to cultivate most thoroughly the ground already occupied, but do all in our power to enlarge and extend the province of pharmacy. My predecessor in the chair, in his address at Manchester last year—an address which both charmed and cheered us—referred to the great need of research in this country, and pointed out the splendid opportunities afforded by our calling for the cultivation of the faculty. I would go even further than this, and say that the time has come when every man who intends to hold his own in the struggle for existence will be bound to become both a researcher and a producer on a larger or smaller scale. Even in the production of his own proprietaries, whether intended for toilet or medicinal purposes, a certain amount of experimental work is necessary in order to obtain the best available article of its kind; and in these days it is only the best preparation producible (the thing, in other words, to which the term "speciality" can legitimately be applied) which is likely to do credit to the producer and repay him well for its production.

Let me illustrate my meaning.

The question was once put to me by a customer as to why a certain brand of carbolic tooth-powder retained its strength so perfectly that the last portion used was just as strong as the first. I knew that the basis of this particular tooth-powder was supposed to be an infusorial earth, yet, strange to say, the microscopical examination showed no diatomaceous structure, but an abundance of starch-grains. Treated with an acid, carbon dioxide was evolved, and the filtrate responded to the characteristic tests for calcium. Working on these lines, not merely the composition but the proportion of each ingredient in the dentifrice was roughly determined. The function of the starch was evidently to act as an absorber or fixer of the phenol. As with proprietaries so in the case of many galenicals, of which I may select the ipecacuanha-wine of the 1867 Pharmacopœia as a typical illustration. Here was evident decomposition taking place, indicated by the constant formation of a deposit in the liquid. An explanation of the cause of the precipitation was almost invariably sought from the chemical side, and dozens of notes on this aspect of the subject have been read at meetings such as this. I knew one well-known pharmacist, however, who for years produced a preparation which he guaranteed not to deposit, and who secured the object by a simple process of sterilisation. These cases are merely quoted to emphasise the point that to obtain the best possible results in the production of a tooth-powder, a galenical, or anything else, the infusion of an element of brains is needed, and the statement is capable of very wide application. Not many fortunes have been made in pharmacy, and the few have almost invariably been the result of an ordinary article of a distinctive and very superior character. Is not this the lesson taught in every sphere of human industry? There may be a fortune in the fashion of a buckle, the turning of a screw, or the shape of a button, and let us not forget that it was in Scotland that the close observation of a common and not very favourite insect is said to have taught the lesson of perseverance and led to a throne.

Moving outside the ordinary business of pharmacy, it has always been a source of wonder to me that some of the young men trained in our pharmaceutical colleges, and most of whom possess in greater or lesser degree the faculty of research, have not thought it worth while to take up the study of the chemistry of some of the indigenous medicinal herbs of the United Kingdom. A large proportion of the 2,000 or more native plants possess valuable medicinal properties, yet little is known of the constituents of very many of them. It is surely the reverse of creditable to British pharmacists that no complete proximate analysis has been made of such common herbs as yarrow, pilewort, comfrey, celandine, bittersweet, eyebright, mandrake, bog-bean, or even of valerian or chamomile-flowers. Yet it is certain that any man with special qualification for the work could make a name for himself and throw a flood of light on many of the most intricate problems in plant metabolism and vegetable physiology if he would take the trouble to isolate and characterise the chief principles in any one of these common drugs and trace as far as possible their origin and development in the plant during the course of its life-history. Let me refer for a moment to the interesting results obtained by Mr. Farr and myself in studying from a chemical standpoint the life-history of the hemlock-plant. I do this with all the more pleasure because for much of the work done on the pharmacological side we were indebted to Dr. William Findlay, whose experiments were carried out in this very building. In the course of our research we determined the alkaloids in the roots, stems, and leaves of seedlings, of second-year plants before flowering, then of the flowering plants (including the flower-heads), and lastly of the different parts of the entire herb in various stages of fructification. We found that the percentage of alkaloids in the seedlings ranged from 0.017 in the roots to 0.031 in the leaves; in the second-year plants before flowering from 0.019 in the stems to 0.12 in the leaves; in the flowering plants from 0.05 in the roots to 0.24 in the flowering tops; and in the fruiting plants from 0.12 in the stems to

about 1 per cent. in the immature fruit. So that the flowering tops contained twice as much alkaloids as the leaves, and the green fruit about eight times as much. It was remarked that during the period of fruiting the plant developed an enormous amount of energy, and we had every indication of the presence of an enzyme or other agent of tremendous power. After the fruits had reached maturity a rapid decrease in their alkaloidal strength was observed. I feel convinced that many of the most difficult problems in plant physiology will have to be solved not in the laboratory, working upon dead material, but by going straight to Nature and studying Nature's handiwork out of her own handbook. Much of

The Future Work of the Pharmacist

will have to do with the proximate analysis of drugs—new and old—and much also with their elaboration and exhibition in medicine in the form of preparations illustrating the triumph of elegant pharmacy, and more particularly in the devising of new groups of remedies in response to the demand of medical men for more scientific weapons with which to combat disease. One would have thought that the remarkable development of therapeutics and pharmacology during the past half-century would have led to a discarding of galenicals and the substitution of pure principles, the physiological action of which can be gauged with almost perfect accuracy, but of this, so far as I can judge, there is at present very little sign. Still, there is such a thing as fashion even in physic, and a new departure in that direction might take place very rapidly. The preparation of sera will hardly fall within our province, seeing that these require physiological standardisation, involving experiments upon animals, such as may only be carried out (quite properly so in my judgment) by qualified and licensed vivisectionists. Of quite another character are animal extracts, and especially the hormones, those active constituents of the glandular secretions, which, being definite chemical principles, may be isolated and obtained in a pure condition. These products of the vital forces appear to possess far greater potency than any known vegetable principles, and their isolation, synthetic production, and employment will—on a large scale—undoubtedly constitute one of the most characteristic developments of medical and pharmaceutical practice in the near future.

In some localities there are openings for work in toxicology and bacteriology, such work including urine and blood analysis, the determination of the opsonic index, examination of sputa, the identification of micro-organisms, etc. It is only in a few favoured centres that much of this work can be obtained, and still fewer in which it can be made pecuniarily remunerative, requiring, as it does, not merely special opportunities, as well as training and equipment, but also an expenditure of time such as few busy pharmacists can afford. The success of the individual pharmacist in the future will depend upon his personal character and equipment, mental, moral, physical, and more particularly upon his brain-power, fertility of ideas, his capacity for initiation and organsation, and his ability to adapt himself to his environment. Let there be no mistake about one thing. The old days of rule-of-thumb are over, and now only efficiency, and that of the highest degree, can command success. The time has gone by for ever when the *genius loci* can sit in his back-parlour listening to the money dropping into the till, and when the purchase of a good business was sufficient to ensure a comfortable income. The British public will overlook much in its servants, but it rarely fails to penalise inefficiency very severely. Herein lay the power of a man like the late William Martindale. Great man though he was, he had his limitations, and in some directions those limitations were pretty severe; but he was thoroughly master of his craft, and this was the secret of his marvellous strength as a pharmacist.

The advancement of pharmacy as an honourable calling, worthy of educated men, will depend upon the extent to which pharmacists are willing to sink their own personal interests and work together for the good of the body corporate. On the scientific side this involves whole-hearted devotion to pharmaceutical research, for let it be remembered that the researcher must always lead the way, and all pharmaceutical work, small or great, if thoroughly done becomes a distinct asset to the whole body of pharmacists. The progress of pharmacy to-day is hindered more by the vast mass of inertia and the amount of talent lying unused for lack of moral earnestness than by anything else, and I fancy that many of the younger men in pharmacy will have to wake up if our calling is to keep pace with the modern developments of biology and chemistry on the one hand, and pharmacology and therapeutics on the other. The time is ripe for the advent to pharmacy of men of the same type as those who founded this Conference, and who gave of their best both to it and to the Society which they adorned, and to which they were proud with a not unworthy pride to belong. Let us hope that history will repeat itself, and that the tendency to self-gratification and effeminacy so characteristic of this age will not cast its blight upon the coming race of pharmacists. "Give your life royally," was the advice sent out by that grand old Scotch philosopher and sage, Thomas Carlyle, to a youth who had written to him for guidance, and it is advice which needs to be repeated for the good of pharmacy to the rising generation of pharmacists. Above all is research needed—research having a scientific basis, but the improvement of pharmacy as its object—it is necessary both in the interests of the individual and of the class; for the former, else he is bound to lose his power of original thinking and become stereotyped in his methods of work; and for the latter because a progressive policy is the only one possible in an age like the present, and pharmaceutical progress is unthinkable apart from research. True, pharmacy has not much to offer in the shape of rewards—pecuniary or other—but, as Mr. Martin well said in his presidential address at Bournemouth, "Gold and personal fame should not be made the goal of our existence." Far from this, it may be the lot of the research worker to toil in faith for many long weary years and to die at last in the wilderness; but even so, the life-work is not wasted, for, as Whittier well puts it with regard to labourers in the very highest sphere of life and action in that most beautiful and rhythmic of his poems, "Barclay of Ury," the scene of which is laid in the streets of the city in which we meet to-day, when he says:

> Knowing this, that never yet,
> Share of truth was vainly set,
> In the world's wide fallow,
> After hands shall sow the seed,
> After hands from hill and mead,
> Reap the harvests yellow.
>
> Thus, with somewhat of the seer,
> Must the moral pioneer,
> From the future borrow;
> Clothe the wastes with sheaves of grain,
> And on midnight's sky of rain,
> Paint the golden morrow.

Vote of Thanks.

Mr. E. Saville Peck (Senior Hon. Secretary) asked Mr. R. A. Robinson (Chairman of the London County Council) to move a vote of thanks to the President for his address.

Mr. Robinson rose amid cheers. He said Mr. Wright had put great restraint on himself in respect that they knew he was one of the most competent researchers in original work. Instead of giving them his experience in that direction Mr. Wright had thought it better to deal with the whole subject of pharmacy. Perhaps the gentlemen of the Press, who were keen to note the striking things in an address of this character, might think from what Mr. Wright had said in one part that in pharmacy they had some hen-roosts to rob—(laughter)—so he desired to assure them that it was not so. In pharmacy they needed protection, and they wanted more protection in the performance of their statutory duties. (Hear, hear.) At the beginning Mr. Wright had given them the history of the rise of pharmacy, and he was afraid Mr. Wright was to end by describing the fall of pharmacy. (Laughter.) He was glad, however, that the President had given them encouragement, with which he fully agreed and which he commended to them as worthy of acceptance, so that original knowledge and work should be successful. They knew that pharmacy required greater efficiency than ever before. He cordially

agreed with the President that they wanted more protection, in order that the community might benefit from the labours and knowledge of the individuals. He congratulated the President on the address he had chosen. (Applause.)

Mr. Peck, again rising, called on Mr. J. F. Tocher, Peterhead, to second the vote.

Mr. Tocher said every pharmacist in the room would agree that the address had reminded them of their responsibilities and had deepened their interest in pharmacy, so was an address that had searched their hearts. Mr. Wright was a practising pharmacist with a wide and long experience, whose originality and technical skill had long been known. He had added to their knowledge that of the special branches of their craft, and had given his intellect full play, and they had the results of his experience focussed into one hour. He hoped Mr. Wright's view of pharmacy would not only stimulate them to greater efforts, but would not be without its effect among the medical profession and the public. They looked towards no pharmaceutical millennium. As citizens they recognised the law of supply and demand, and as scientific men they had a place in the body politic, and that place was to study, to know, and to prepare medicines. They were an integral part of the State, and for the continuation of their own existence they had to continue to strive to keep pharmacy for the pharmacist. He trusted one of the effects of the address would be to aid in directing the dispensing of prescriptions in England into the proper channels, and that another effect would be that the public who bought potent poisons would know what was being purchased. He hoped the President's address would not be without advantage in Parliament. (Applause.)

Mr. N. H. Martin said that, as the senior past President in the room, he had the pleasure to ask the Conference to carry with acclamation this vote of thanks. (Applause.) It was not always easy to analyse one's motives in what one did, but his motives in coming to Aberdeen were extremely simple and primitive. Since he made his home on the Tyne, he had seen week by week at the quayside the steamer which kept up a commercial link between Aberdeen and Newcastle. Many years ago Aberdeen sent to Newcastle a young man, named Mitchell, who did more than any individual to develop the great shipbuilding industry on the Tyne, which has culminated in the building of the *Mauretania* and the *Invincible*. It was Mitchell's yard which was combined with Armstrong's that built these great battleships. But Mitchell repaid Aberdeen the debt which nature had performed for him, for it was Mitchell who gave to this great University much of the funds that rendered it possible to raise this beautiful building in which they were assembled. (Applause.) They in Newcastle did not in the least grudge the large sums he gave to Aberdeen; in fact, they rejoiced that he did, because they were grateful to Aberdeen for having given them Mitchell. But the highest and greatest of motives was his (Mr. Martin's) personal friendship for Mr. Wright. (Applause.) They had been colleagues in a piece of work connected with the Conference in which both of them took a great interest; but Mr. Wright's ability, his wide knowledge, and his industry in connection with the work were beyond all praise, and he had always felt Mr. Wright to be an ideal pharmacist. He was sure the address they had listened to would have impressed them with the fact that his knowledge of pharmacy was wide and profound. Comprehensive as the address was, it would be impossible to allude to any portions of it, but it bristled with suggestions of very high value, and if any young men who were inclined to take a doleful view of the future of pharmacy would take up this address, and glean from it the grains of wheat in it and act upon them, they need not have any fear for the future of pharmacy. (Applause.) His experience of forty years had happily not been so tragic as some of the experiences of Mr. Wright, but over and over again it had occurred to him either personally or in connection with some colleague to act the part of the safeguard of the public from accident and from misadventure. But in regard to the younger men it had always been a marvel to him and also to his predecessor that pharmacy did not act as a stimulus to far more intellectual activity. Only some four or five years ago he wanted a dispensing assistant, and among the applicants was one who had served his apprenticeship and passed his Minor examination. In all respects he seemed a competent person to engage; but, according to his custom, he (Mr. Martin) asked him one or two questions, such as the doses of liquor strychninæ and Dover's powder, and the active principle of jaborandi. The young man did not know—(sensation)—and said that he had not thought he would be asked things like that, although he had got them up for the Minor! He (Mr. Martin) was afraid that was the attitude of a great many young men, and that was why in some cases they took a despairing view of pharmacy, but if they would only qualify their memories and embrace their opportunities of obtaining scientific knowledge those in the medical profession and all others who came in contact with pharmacy would have the success achieved by their President. (Applause.)

The motion was put by Mr. Martin and acclaimed.

The President, in replying, thanked the speakers for their words of appreciation. He only wished it was better, but he could say this—that he had put in the address just what he had tried in practise in his pharmaceutical life. One reason he rejoiced in having an opportunity of giving that address was this—that he knew, speaking as President of the Conference, what he said would command attention at the hands of pharmacists generally. In preparing his address, he had in his eye not so much the members assembled in Aberdeen as the hundreds and thousands of men, particularly young men, in pharmacy, who would, maybe, take the trouble to read it. (Applause.) The President then intimated that the Local Committee had made arrangements for the pleasure of the ladies elsewhere, and now was a convenient time to leave.

Report of the Executive Committee.

Mr. Peck read the report, which stated that six meetings were held during the year. At the meeting of the Research Sub-Committee, on February 11, a proposal from Mr. Alcock that problems should be worked out under the direction of and results published by the Executive was negatived, as such work forms more fitting subjects for papers and criticism at the annual general meeting. The revision of the research-list by Messrs. R. Wright (President), Alcock, and Peck resulted in the deletion of a few problems and the addition of over thirty new ones, and copies of the revised list were distributed at the time; and it is interesting to note that twelve of the papers to be read at this year's meeting deal with problems mentioned on the list, and others are taken in hand but not yet completed. A grant of 5*l*. from the Research Fund was made to Messrs. J. Grier and H. Garnett for work upon the pungent principle of ginger, and 2*l*. to Mr. W. B. Cowie for chemicals in connection with his researches on scammony, jalap, etc. The committee urge the members to co-operate in securing the enrolment of visitors as members, and views with concern the lapsing of subscriptions or resignation after two or three years' membership, 109 names having been erased this year. Seventeen deaths of members occurred during the past year, including Mr. Joseph Ince, who did much in the earlier years to make the Conference the success it is, and Mr. J. W. Bowen, who was rarely absent from the annual gatherings, shedding an unforgetable influence upon all he met. Mr. Isaiah Bourdas has consented to act as auditor in Mr. Bowen's stead. Three hundred copies of the "General Index" are still left, but only 10*s*. was received for indexes during the year, and the Executive is surprised at the apathy of the members in regard to the compilation costing such a considerable sum. Mr. J. C. Braithwaite has been reappointed editor of the "Year-book," and the work of the new volume is proceeding. One hundred and twenty new members, including one lady, have been elected, many residing in the Aberdeen district; other lady members would be heartily welcomed.

Mr. W. S. Glyn Jones, in moving the adoption of the report, said he was sure everyone would agree that the report was a satisfactory one, and one on which they could congratulate the Executive. (Applause.)

Mr. F. W. Branson seconded the motion, and the report was unanimously adopted.

Treasurer's Report.

Owing to the unavoidable absence of Mr. John C. Umney, his report on the finances of the Conference was read by Mr. Peck. It stated that the finances compared with last year show a setback, owing to the increased cost on the "Year-book" of 50*l.* more, making the deficit this year 39*l.*, against 9*l.* in the previous year. The amount received in subscriptions is considerably less this year, owing to the later issue of Conference circulars being approximately, during June, a sum of 30*l.* less, which would mean that the sum received this year is greater. The Treasurer hoped that a great many members who had not paid their subscriptions this year will do so, and so receive the useful "Year-book."

The statement showed, on the debtor side, cash in hand and at bank, 30*l.* 17*s.* 2*d.*; members' subscriptions, 279*l.* 16*s.*; amount received for "Index," 12*s.* 10*d.*; "Year-book" sales and advertisements in "Year-book," 85*l.* 11*s.* 1*d.*; liabilities on open accounts, 142*l.* 0*s.* 8*d.*; Bell and Hills Fund, 23*l.* 1*s.* 8*d.* On the credit side, Bell and Hills Fund (last year), 24*l.* 6*s.* 2*d.*; "Year-book" expenses, 232*l.* 4*s.* 3*d.*; editor's salary, 75*l.*; sundries, 75*l.* 19*s.* 4*d.*; printing and stationery, 3*l.* 3*s.* 3*d.*; petty cash, etc., 7*l.* 16*s.* 1*d.*; liabilities of last year, 40*l.* 14*s.*; cash in hand and at bank, 102*l.* 16*s.* 4*d.* The net deficit on July 1, 1908, was 39*l.* 4*s.* 4*d.*

Mr. George Lunan, in moving the adoption of the annual financial statement, said it was not altogether satisfactory, but that result was due to the expense of the "Year-book," as to which later in the proceedings a motion would be submitted with a view to its curtailment. He considered the report satisfactory on the whole.

Mr. G. F. Merson seconded, and remarked that year by year they had a considerable accession to the membership from the district in which the Conference was held, but as regularly, year by year, they had a large number of members dropping off. A strong effort, he suggested, might be made to see that the subscriptions were kept up.

The report was adopted.

Delegates.

Mr. E. White (Junior Hon. Secretary) read the following list of delegates :

Pharmaceutical Society of Great Britain.—The President, the Vice-President, Messrs. Cross Currie, Gifford, Harrison, Hobbs, Rowsell, Symes. *North British Branch.*—Mr. Geo. Lunan (Chairman), Mr. W. Giles (Vice-Chairman), Messrs. Cowie, Currie, W. Doig, Dott, Gilmour, Glass, Kerr, Mitchell, Nesbit, J. A. Russell, J. W. Sutherland, J. Tocher.

Pharmaceutical Society of Ireland.—President (Mr. J. Smith), Messrs. Beggs, Walsh, Wells.

Aberdeen Pharmaceutical Association.—Messrs. Giles, Alexander Hay, Paterson, Craig, Anderson, Bruce, Kay, Leslie, Mackie, Alex. Milne, Reid, Reith, C. Simpson, G. Simpson, Spence, Strachan, J. F. Tocher, Adan, Black, Bonner, Bremner, Collie, Coutts, N. B. Cran, Crossling, Dickie, A. F. Dugan, H. M. Dugan, Duncan, R. W. Dunn, Findley, Frazer, Gall, Gerrie, Grant, Gray, Horne, Hunter, Lee, Leslie, Low, Lunan, Mackie, G. McGregor, Marr, J. Milne, P. D. Milne, Mitchell, Park, Pennie, Pirie, A. Robertson, Ross, Shearer, G. J. Shepherd, W. Shepherd, Shirras, Stewart, Taylor, Walker, Wallace.

East Aberdeen Chemists' Association.—Mr. J. H. Low (President).

Belfast Chemists' and Druggists' Society.—Mr. W. J. Gibson.

Bradford Chemists' Association.—Messrs. Hanson and Silson.

Forfarshire Chemists' Association.—Messrs. J. S. Whyte (President), Macfarlane, Kerr, Russell, Gray, Cummings.

Glasgow and West of Scotland Chemists' Association.—Messrs. Gilmour, Currie, Kitchin, Lennox, McMillan, McNay, Russell, Tocher (R.).

Leeds Chemists' Association.—Messrs. Branson and Beacock.

Liverpool Chemists' Association.—Messrs. Symes, Marsden, W. P. Evans, Shacklady.

London Western Chemists' Association.—Messrs. Martindale, Proctor, Ed. White.

London Chemists' Assistants' Association. — Messrs. Arrowsmith and Clarke.

Manchester Pharmaceutical Association.—Messrs. Pidd, Hughes, Kidd, Blackburn, Barlow, Cleworth, Bates, Grier.

Newcastle Chemists' Association.—Messrs. Clague, Foggan, Gilderdale, Wray, Weddell, Simpson, Noble.

North Kent Chemists' Association.—Messrs. Clarke and Goldthorpe.

North Staffs Association.—Mr. Edmund Jones.

Nottingham Pharmaceutical Association.—Messrs. Adamson and Middleton. (Mr. Middleton desires to express his regret that he is unable to be present.)

Oxford Chemists' Association.—Messrs. Clayton and Dolbear.

Public Dispensers' Association.—Mr. C. T. Rutter.

Stockport Chemists' Association.—Messrs. Arnfield, Bennett, Orrell.

The President said this was the list as far as they knew, but he would be glad to hear of any more Associations represented.

Mr. Goldthorpe, in response to this, said he attended as a delegate of the London Chemists' Association as well as of North Kent, and Mr. Percy Carr said he represented the Sheffield Pharmaceutical and Chemical Society. Subsequently it also transpired that Mr. H. E. Boorne was delegate for the Bristol and District Pharmaceutical Association.

The President remarked that he wished it to be understood that they were particularly delighted to see the delegates that morning. He wished they could increase the interest taken in the reception of the delegates—(hear, hear)—and he thought it was a matter which might be reasonably considered by the Executive Committee whether something more might not be done to make the reception of the delegates a live as distinguished from a purely formal thing. (Applause.)

The President called attention to the shilling "Formulary" which the Aberdeen Pharmaceutical Association has issued to local medical practitioners.

The next item on the programme was

Discussion and Reading of Papers.

These we give in the order in which they were read, with reports of the discussions. The first one was

Formic Acid and some of its Salts.

By George Lunan, Ph.C., F.C.S.

The pharmacology of the formates is still nebulous. Certain practitioners obtain fair results in general practice, while others say the properties of muscle stimulants, relief from fatigue, and "tonics" are non-existent.

The purpose of this note is to discuss the comparative purity and mode of exhibition of the formates. Generally formic, aminic, or carboxylic acid (H.COOH.) is sent out labelled "Acidum Formicum," containing 25 per cent. of acid, sp. gr. 1.06. A 10-minim dose represents practically 2½ grains of H.COOH. The acid can be readily procured of 100 per cent., sp. gr. 1.24; 90 per cent., sp. gr. 1.2; 80 per cent., sp. gr. 1.18; down to 25 per cent., and the 1.2 is the acid used where there is a fair requirement for manufacturing and dispensing purposes. It should be noted that this bears the label of "Acidum Formicum, sp. gr. 1.2," but it is not intended for dispensing-purposes. In the next higher homologous acid—acetic acid—we have the three strengths—acidum aceticum glaciale, acidum aceticum, and acidum aceticum dilutum—and two standards might also be adopted with formic acid even if not official.

Looking to the modes of manufacture, one might expect traces of solids, chlorides, oxalates, and sulphates, but while the author has found a trace of solids and chlorides in commercial acids, they have been free from oxalates and sulphates. A typical and average sample of 90-per-cent. acid (sp. gr. 1.2) was sp. gr. 1.197, and contained traces of solids and chlorides and 89.75 per cent. H.COOH.

The total volume of a 25-per-cent. solution, which is meant when acidum formicum or acidum formicum dilutum is prescribed, can readily be ascertained by dividing the higher decimal of the sp. gr. 1.197 by the lower 1.06 required, taking one fluid part of the 1.197 and making up with distilled water to the dividend in fluid parts, as there is neither expansion nor contraction. Some of the reputed 25-per-cent. solutions contained a slightly higher percentage of acid, and had a sp. gr. of 1.062 and 1.063. Some commercial samples examined by the author had evidently been diluted with tap-water, as they contained marked traces of chlorides and lime. The

author next submitted notes on the salts of the acid, as follows :

Calcium Formate [$Ca(COOH)_2$].—This salt is supplied in small glistening crystals in almost anhydrous condition. The samples found have been almost pure salt without any tendency to deliquesce. The maximum dose should be 5 grains (equal to 3 grains of the formic radicle). Irritating properties have manifested themselves if gram doses are given, while the smaller dose acts as a muscular stimulant without any untoward symptoms.

Lithium Formate ($Li.COOH.H_2O$).—One sample made by the author corresponds to the chemical formula. It is slightly hygroscopic, but not so deliquescent as the potassium and sodium salts. The "B.P. Codex" dose, 1 to 5 grains, is right, and effervescent granules prepared at 75° to 85° C. are the best mode of administering it.

Potassium Formate (K.COOH) is more deliquescent than the sodium salt, and is difficult to crystallise and dry. Heated to 240° C., samples readily show the oxalic reaction. Though reputed to be anhydrous, the salts examined by the author lost 1 to 2 per cent. of moisture when dried at 80° to 90° C. At a meeting of the Edinburgh Medico-Chirurgical Society (*C. & D.*, 1908, I., 280) the authors of a paper on the therapeutic value of the formates attributed toxic symptoms to the potassium salt, which might be due to an excessive dose or the presence of oxalates. In this connection it is advisable before publishing therapeutic notes to ascertain the comparative purity of the salts to be used. The dose of this salt has not been definitely ascertained, but should not exceed 10 grains. The salt should be carefully tested for impurities.

Sodium Formate ($Na.COOH.H_2O$) is found in a reasonable state of purity, but being deliquescent and containing a molecule of water of crystallisation, the samples examined contained an average of about 1 per cent. of moisture—that is if obtained as a white crystalline crust. With rhombic crystals this is not so. Traces of chlorides are usually found, but no other likely impurity. The dose should not be more than 10 grains, as more produces irritating effects.

Strychnine Formate ($C_{21}H_{22}N_2O_2.H.COOH.2H_2O$) is found commercially in an anhydrous condition owing to a tendency of the salt to effloresce down to 1½ molecule of water of crystallisation. The anhydrous salt with a definite percentage of strychnine, or about 89 to 11 of H.COOH, is preferred. It can readily be rendered anhydrous without decomposition by heating to not more than 90° C. Thereafter it is stable. If this salt is given hypodermically it is well to advise the prescriber that $\frac{1}{10}$ grain contains $\frac{1}{560}$ grain of the formic radicle, and may be formically of little value.

The author considers that a combination of the calcium, sodium, and strychnine salts in an aromatic glycerin menstruum is therapeutically the best and most stable combination, and agrees with the patient, provided not more than 3 to 5 grains of the formic radicle is given.

Discussion.

The PRESIDENT said : We are all interested in Mr. Lunan's practical note, and will be glad to hear any comments upon it from members.

[Mr. Wright made similar remarks in opening most of the discussions, and we do not repeat them.]

Mr. HORACE FINNEMORE, rising, after a pause, said just to set the ball rolling he would ask if Mr. Lunan had found oxalic acid present as an impurity in formates. He also pointed out that the formula for potassium formate is not K.COOH, but H.COOK.

Mr. LUNAN assented.

Mr. THOMAS STEPHENSON asked if calcium formate, as with many organic salts of calcium, notably calcium lactate, is liable when in solution to become insoluble, and if it would not be advisable if this was the case to prepare it fresh, using molecular proportions of the constituent-base and acid. With regard to the strychnine salt, the variation in amount of water of crystallisation results in difference of toxicity, and the anhydrous salt only should be used. Moreover, as the strychnine alone in the doses of the salt given is of therapeutic consequence, he considered that the use of the salt should be discouraged, and a sufficiency of liq. strychninæ added to any preparation of formates. As chemists they could not disregard the therapeutic side of the question. They had been told by many people that the giving of formates is all humbug, and physiologists say that they have no physiological action on the animal economy, while therapeutists say they get good results from them. Considering the place which formic acid plays in nature, he could not help thinking that in medicine it attaches itself to some part of the organism which requires it.

The PRESIDENT asked speakers to confine their remarks to the character and composition of formic acid and the formates, and not to go into the question of physiology or therapeutics, which were not the subject of the paper, and were outside the province of the Conference.

Mr. F. H. ALCOCK : May I discuss the posology of the formates ? (Laughter.)

The PRESIDENT : No.

Mr. ALCOCK asked if the determination of amount of formic acid in solution was attended with similar difficulties as in titration of acetic acid. He would like to know the origin of the synonym "aminic acid." On referring to Mr. Stephenson's remarks, Mr. Alcock was interrupted by the PRESIDENT, who again stated that posology or physiology was not in the province of the discussion ; but Mr. Alcock eventually stated, to the amusement of the meeting, that the presence of formic acid in beehives prevented disease among the bees by acting antiseptically.

Mr. TAYLOR wished to know if the formate compounds are quite free from lead derived from the bottles ?

Mr. LUNAN, in replying, stated that formates might possibly contain oxalic acid due to the process of manufacture, but he believed the process of heating glycerin and oxalic acid was not used on a large scale ; but in any case, formates should be looked for, since they were produced on heating formates to a high temperature. The synonym "aminic acid" was in the "B.P. Codex"—probably derived from "ants." The titration of the pure acid (leaving no solids on evaporation) was done quite well to sodium hydrate. No lead had been found in the specimens examined.

The PRESIDENT, in thanking Mr. Lunan, said his note was an interesting paper on an interesting subject.

At the request of the PRESIDENT, Mr. J. F. TOCHER read an abstract of a paper on

Seeds of Omphalea Megacarpa (Diandra), Omphalea Triandra, and Garcia Nutans: Their Characters and Action.

By J. THEODORE CASH, M.D., F.R.S.

The seeds are of euphorbaceous origin. The first supply was sent by Mr. J. H. Hart, of the Botanical Department, Trinidad, and subsequently samples were kindly forwarded from Kek. The largest seeds are those of *Omphalea megacarpa* (*diandra*), averaging 33.93 mm. long, 31.43 mm. wide, and 21.63 mm. in depth, with an average weight of 12.475 grams, but the variation in weight (and size) is from 7.6 to 15.84 grams. From above the seed is approximately circular, the neutral surface exhibiting two facettes separated by an obtuse median ridge, and a small beak projects at the micropyle. The testa is thin and hard, but brittle, with fine, frequently linear tuberculations, and of dull grey colour or exceedingly rusty in tint. The seed floats, and the loss on removing testa and silvery papyraceous tegmen averages 3.25 grams. The white to creamy-yellow endosperm is flexible and easily reduced, with a nutty and agreeable taste suggestive of oil on chewing, and no acidity is recognisable. A rich emulsion is formed on triturating with mucilage. The embryo is upright, with broad cotyledons.

Omphalea triandra, or "cot-nut," differs strikingly in size and configuration from the above. The average length (from beak to hilum) is 22.86 mm., and the shape is nearly spherical. The average weight is 6.2 grams with no great variation. Three ill-defined ridges diverge from the faint micropylar beak, and are lost on the sides. The smooth testa, of rusty or mahogany tint, is peculiarly hard and resistant, and usually dull, but rarely of varnished appearance, and frequently obscurely mottled with darker patches. The seed floats buoyantly, and the loss due to testa and a varying amount of papyraceous tegmen averages 1.747 gram. The endosperm is slightly creamy in colour, smooth, with bean-like oily taste and devoid of odour. Embryo upright, with broad cotyledons.

Garcia nutans.—But few of the seeds were at disposal, and they averaged 1.607 gram in weight with close uniformity in size. The thin, but hard and resistant, testa is buff in colour, splashed with irregular light-red to rusty-brown patches, and contains abundant endosperm with erect, broadly cotyledonous embryo. The testa and thin papery tegmen weighs 0.315 gram on the average. The odour of the freshly broken seed is nut-like and

agreeable; a sensation indicating oil is produced on chewing, which develops into an unpleasant and somewhat persistent tickling or scratching sensation in the region of the soft palate and fauces.

The three seeds give rich emulsions on trituration with mucilage, and a soap with solution of potassium hydrate. Extraction by ether yielded the following percentages of oil :

Seeds from	From Endosperm	From Whole Seed
Omphalea megacarpa (diandra)...	64.00	47.33
Omphalea triandra	56.60	36.90
Garcia nutans	36.29	26.00

The figures for *megacarpa* correspond with those (65.0 and 40.8 per cent. respectively) of Professor Dunstan, using light petroleum for the extraction. The "Omphalea" oils are pale yellow in appearance, and the specific gravities (15°/15° C.) are : *O. megacarpa*, 0.922; *O. triandra*, 0.924. A slight separation of concrete substance took place after about twelve months, but little increase occurred in the subsequent year. The oil of *O. megacarpa* was examined at the Imperial Institute, and results are published in the "Journal of Physiology" for February. The oil is less viscous than castor oil, but the iodine-value indicates a larger proportion of unsaturated fatty acids.

The oil of *Garcia nutans* tends to undergo rapid change, gelatinous flakes separating from the fresh pale straw-yellow oil within two or three days, and subsequently the whole of the oil undergoes this change. The properties are modified, as it is no longer soluble in ether and its physiological activity is reduced.

The Physiological Action of the fresh seeds and their products was the ultimate object of the investigation. All have a reputed laxative action, and some or all have been used dietetically occasionally in Jamaica for this purpose.

Omphalea megacarpa.—A healthy normal male, subsisting on simple diet, swallowed, after thorough mastication, varying amounts of the fresh seed. With 6 to 9 grams a distinct purgative or laxative effect followed from five to eight hours after ingestion. No griping or unpleasant consequence was recorded, and the action was constantly reproduced by repetitions of the original dose after intervals of six or seven days. Some increase in fluidity of evacuation and accompanying transitory diuresis were concomitants of the larger doses. While 4.0 to 5.0 grams of the seed constitutes an average laxative dose, 3.0 grams is sufficient to cause laxative action the morning following ingestion. The separated oil is identical in character but somewhat less energetic for proportionate doses: 6.8 grams of the seed produces a more distinct action than the corresponding amount of oil, 3.8 grams. The minute angular fragments of the seed probably account for this slight discrepancy in activity. Administration of the oil to rabbits was followed by parallel results only, the dose being relatively distinctly larger owing to the animal's slight receptivity. By weighing animals receiving a carefully weighed dietary, the administration of oil was shown to cause an early increase in the urine, but the dejecta were in excess mainly on the following day. The increase due to ingestion of 1.0 c.c. of oil was—fæces 15 per cent., urine 18 per cent.; for 0.75 c.c. of oil—fæces 11.2 per cent., urine 11.8 per cent.

Omphalea triandra.—The same observations apply to the seed or oil of the "cot-nut," which produces in suitable doses a corresponding laxative or purgative effect, in a few or several hours, without griping. Larger doses augment intestinal secretion and temporary diuresis. No direct chologogue action has been observed.

It seems not improbable that the two "Omphelia" oils may be identical.

Garcia nutans.—The seed when swallowed in a dose of 0.6 gram, in addition to the faucal sensation, produces later gastric discomfort, shifting abdominal uneasiness, and active purgation. From a dose of 0.4 gram a single purgation may be anticipated in a few hours, and 0.2 gram acts as a laxative the following morning. Thus the seed is ten times as potent as those of the two *Omphalea* species. A further action is demonstrated by local necrosis, ulceration, and failure of heart and refluxes on injecting an emulsion into the dorsal lymph-sac of brainless frogs. Throughout there is an absence of purgation.

A small amount of oil from the limited supply of seeds was employed experimentally, but the action was feebler and less drastic than that of the seed, the conclusion being that some other principle or principles must be located in the seed.

The pulp of a few seeds was extracted with distilled water, slowly evaporated at a low temperature and precipitated with absolute alcohol, and the fine cloudy precipitate after a few days was re-dissolved in water and re-precipitated with alcohol. A portion of the precipitate, freed from alcohol, in a few drops of water proved fatal in three to five days on injection into the dorsal lymph-sac of frogs. The presence of a hæmolytic tox-albumose (Martin), such as ricin, is suggested by the occurrence of hæmorrhagic points with extravasated blood in the sac-walls. The material kept in alcohol for several months was inoperative, and lack of material made it impossible to confirm the previous results.

A diagram was exhibited to show the great acceleration of a small ivory sound through the intestine by the use of the irritant.

The full dose of the seed of *Garcinia nutans* is therefore a drastic hydragogue cathartic, the action being essentially local and attributable to the stimulation of the muscular walls through the mediation of the intestinal nervous plexus. In smaller doses a simple purgative or laxative effect is produced. The oil, if means could be found to preserve it unchanged, would be probably more convenient to employ medicinally.

In recapitulation and conclusion, the *Omphalea* seeds and fixed oils yield valuable simple purgatives without unpleasant effects. The seeds of *Garcia nutans* must be used with caution if utilised in approximate cases, and if the extracted oil is used care must be taken to exclude any other principle.

Specimens of the seeds were exhibited, and in a brief

Discussion

the President said there is a great demand for laxatives and purgatives, and this addition was sure to be of interest. The paper showed the necessity of medical men being assisted by scientific pharmacists, and he felt that to make the subject complete they required some information on the pharmacy side of it.

Mr. Tocher said he appreciated the value of these observations, and hoped that something would yet be done on the pharmacy side. In reply to an inquiry from Mr. Naylor as to the oil being better than castor oil, and what hope there is of a supply, Mr. Tocher replied that he understood the seeds could not be obtained in quantity at present.

The next paper was on

The Electrolytic Administration of Drugs.

By T. Maltby Clague, A.I.E.E., Ph.C.

The importance which electrolysis has assumed in the production of chemical substances would alone be a sufficient excuse for a Conference paper on the subject, but there is, further, the expectation that this simple method will be more familiar to us in producing and testing pharmaceutical products, while the therapeutist, in this field of work, will naturally look to the pharmacist for practical assistance.

As is well known, in the decomposition of chemical substances in an electrolytic solution, the basic portion goes to the negative pole and the acidic group to the positive electrode, the amounts yielded being directly proportional to the currents. The possibility is obvious of using this property in applying a drug where required; thus, in an electric bath, uric and oxalic acids are found at the anode and sodium at the cathode. Morton, Bordier and others have used this method of localised action of drugs, but the striking experiments of Professor Leduc, of the Nantes University, have imparted stimulus to the work. Two of the experiments are detailed below.

Two rabbits were taken, and an ear of one strapped to an ear of the other by a pad of wet lint. To the outer ears pads of lint moistened with a solution of strychnine hydrochloride were attached, and these joined to a battery of cells. The positively connected rabbit at once died, the ions of base (strychnine) being electrolytically driven into the animal. After waiting a few minutes to see that nothing more happened, the current was reversed, with the result that the second rabbit was poisoned.

A second experiment was made, using the same technique, but replacing the strychnine with cyanide of potassium. In this case it was the negatively connected rabbit that died, from poisonous acidulous ions being driven in; and on reversing the current the second rabbit also died.

The electrolytic method of removing hair, nævi, etc., has long been in use. The saline solutions of the body are electrolysed by a platinum or steel needle connected to the negative pole of a battery being inserted into each hair-sheath; the other pole is connected with the hand by a pad of wet lint, or by placing the hand and the pole in a vessel of water, and the current is allowed to pass for about five seconds. The resultant formation of a small but well-localised quantity of caustic soda destroys the vital part of the hair. It has become an every-day practice to use lithium salts for the introduction of basic ions, iodides for acidulous ions, and sodium salicylate for both ions, and some work has been done in driving in local anæsthetics by electrolysis. From the observation that small doses of magnesium sulphate had caused warts to disappear, Dr. Lewin Jones, of St. Bartholomew's Hospital, tried treating them electrolytically with magnesium salts. The results are excellent, an entire absence of scar making the method preferable to the knife or caustic applications, and several warts may be treated at once. Corns readily yield to sodium-salicylate solutions, using the negative electrode. The following experiment shows that ions may be removed from the body :

A young lady had six or seven black patches on the face, produced by the use of an arsenical ointment some years ago, and forming evidently a colloidal deposit which was very disfiguring. Placing the patient's hand in a vessel of water along with the positive lead from six cells, and a pad of wet lint connected with the negative pole over a black spot, after fifteen minutes the coloration was completely removed from the skin, and the pad showed arsenic by Marsh's test. The other spots were disposed of by similar treatment.

Many other examples might be given, but the paper concludes with some practical hints and warnings.

A milliampère-meter is useful in the circuit, especially to beginners.

The positive wire in contact with the patient should not be affected by the electrolytic solution, so that iron, copper, and silver are to be avoided, while platinum is always safe and aluminium is very useful.

For experimental work a lamp-chimney with a diaphragm of bladder at one end can be used as an inner vessel, a beaker forming the outer container, to make a convenient electro-dialyser.

It is important to keep to simple salts as far as possible in this class of work. With a small current of 10 to 15 milliampères a solution of strychnine hydrochloride put into the dialyser (positive) and water in the outer vessel (negative), strychnine is detectable by taste in a few minutes in the outer vessel, and on reversing the current all is soon driven back again; but when a stronger current was employed, paraldehyde formation was evident from the alcohol in the B.P. solution used.

Again, ammonium chloride may yield ammonia at the negative pole and molecular chlorine at the positive electrode; but with a stronger current, using carbon electrodes, nitrogen was collected; while a German observer states that under certain conditions explosive nitrogen chloride may be formed, and yet safely demonstrated, as it rises to the surface in minute bubbles and explodes if a layer of turpentine be added. Should, however, the drops be allowed to coalesce, they fall to the bottom and form a quantity of explosive possessing potential possibilities. Considerable differences exist in different persons as to the amount of electric current that can be borne, but in this work there is rarely any difficulty on that account, as the amount of current passed is small.

Mr. CLAGUE, having read the paper, proceeded to perform a few experiments. Using a battery of six dry cells, he took a piece of lint which had been saturated with solution of sodium chloride and phenolphthalein, but was white, and, placing it on the poles of the battery, it was noticed that the spot in contact with the negative pole became crimson, showing that sodium ions were eliminated there. In the case of potassium iodide lint the positive pole got the brown spot arising from iodine ions. A still more convincing experiment was next shown, Mr. Clague saying that as the nearest approach to experimentation *in corpore vilo*, he had brought a bladder filled with normal saline solution. Against each side of this he pressed an aluminum pole covered with cotton saturated with saline solution and phenolphthalein, and within a second or two the tuft of cotton on the negative pole became crimson.

The communication interested the members greatly, but there was no discussion upon it. The PRESIDENT, however, remarked that it showed how wide is the field which the chemist with scientific bent may cultivate.

A running and humorous commentary was given by the author of a paper on

Some Powdered Drugs.

By F. H. ALCOCK.

Solubility constants for drugs in various solvents (*e.g.*, ether, alcohol, chloroform, water, etc.) being in the Conference research list, and the author having recently had occasion to examine sundry powdered drugs, including gentian, liquorice, and almonds, he thinks a record of the experiments may interest the members of the Conference. The above-mentioned drugs do not offer definite principles of tangible value, since not much is known about their chief constituents. The amount of ash yielded by drugs on incineration has afforded valuable data, rendering it possible to distinguish true calumba-root in powder from an admixture with the powdered stem, and has frequently solved other problems of the same nature. Similarly the solubility constants of resinous drugs (myrrh, asafetida, kamala, ammoniacum, and galbanum), and of podophyllum, jalap, and scammony resins, in alcohol of various strengths have been well worked out. The microscope, while detecting gross impurities, does not indicate whether drugs have been extracted with solvents and subsequently dried, and drugs such as exhausted ginger, logwood, quassia, and jalap have been found on the market. The amount of aqueous extractive matter at ordinary temperatures was determined on a sample of gentian-root in powder, apparently from appearance and taste not of high quality, since the extractive at certain temperatures, as in the official "extractum" and "infusum compositum," is some criterion of its value; but reference to pharmaceutical literature did not provide much information on the point, so that experiments had to be conducted on drugs of good quality to ascertain the extractive yielded to cold water. The sample dealt with was powdered gentian-root, which was treated as follows :

One gram was treated with 100 c.c. of distilled water and 5 drops of chloroform added, and macerated at laboratory temperature for twelve hours, occasionally shaking vigorously, and especially several times just before removing an aliquot part. Fifty c.c. was filtered off and evaporated on the water-bath until the residue suffered little further loss, and weighed.

The insoluble residue was generally incinerated in the usual way to give an extra figure included in the tables below. The order of mixing is important, while the appearance of the powder when wetted, whether flocculent or heavy in character, and the colour of the solution and appearance of the sediment after the first shaking, should be noted. The choice of filter-paper is also important, as the process of filtration is slow and the particles in some drugs are very small. The author used a glass-stoppered 100-c.c. cylinder, and found that laying it on its side was an advantage. From 94 to 96 c.c. of the liquid could ordinarily be obtained without resorting to pressure, but filtration in the case of nux vomica was unusually slow. The results of the aliquot part method, although not quite accurate, under like conditions yield fairly concordant results. It might be suggested that the contents on the filter-paper be washed with more water to produce 200 c.c. of the filtrate, and weighing the residue from 50 or 100 c.c. of the liquid, but the author finds that fine particles are driven through by the wash-jet from the usual Spritz bottle. In one instance (gentian sample No. 4 below) 50 milligrams of extract was obtained from 50 c.c. by the ordinary method, and a further 90 milligrams from the remainder by the washing process, giving a total of 140 milligrams, while the corresponding figure nearest the truth is 104 milligrams. Figures are given where so stated for the "washing" method.

Gentian-root in Powder.—The figures in the appended table include the doubtful samples (Nos. 4 and 5), which are compared with others (Nos. 1, 2, 3, and 6) purchased

as B.P. drugs. No. 6 was disintegrated in a coffee-mill by the author, the whole (gruffs were absent) being well mixed before sampling.

No. of Sample	Extractive from 50 c.c. (aliquot part method)	Total Extractive from 200 c.c. (washing method)	Ash of Insoluble Portion
	gram	gram	gram
1	0.170	0.350	0.022
2	0.153	0.323	0.027
3	0.167	0.365	0.030
4	0.050	0.143	0.052
5	0.070	0.140	0.040
6	0 174	0.374	0.022

The author says that the ash from the 50 c.c. of aqueous extract may be worth recording in future as under liquorice and nux vomica.

Liquorice-root in Powder.—Commercial varieties, purchased for preparation of experimental batches of "ext. glycyrrhiz." by the "Scotch" process of percolation (the originator of which deserves canonisation), as opposed to the "English" method of maceration, has given diverse results as follows :

Extractive (sine albumine) in grains per ounce avoirdupois of commercial Powdered Liquorice-root.

(1)	85	(5)	88
(2)	120	(6)	117
(3)	103	(7)	90
(4)	78	(8)	114

The following table gives the results obtained by two methods detailed above :

Kind of Liquorice	Extractive from 50 c.c. (aliquot part method)	Total Extractive from 200 c.c. (washing method)	Ash from Soluble Extract from 50 c.c.	Ash from Insoluble Portion
	gram	gram	gram	gram
"Horse-powder" (or veterinary)	0.118	0.256	0.008	0.038
Decorticated (official)	0.142	0.271	0.0075	0.015

Cantharides in Powder is used in the form of aqueous infusion in the preparation of emplastrum calefaciens, and the variability of this plaster would not be altogether dependent upon the texture or sensibility of the human skin, as shown by the following results yielded by the "washing" method of treatment :

Extractive per gram of Powdered Cantharides.

(1)	0 353 gram	(4)	0.325 gram
(2)	0.300 gram	(5)	0.236 gram*
(3)	0.210 gram	(6)	0.270 gram

Gum Acacia in Powder.—In a note published some years ago it was stated that the part insoluble in water should not exceed 0.2 per cent. This has not met with the approval of the Committee of Reference in Pharmacy which is assisting in the compilation of the Pharmacopœia, and the author wishes to emphasise that the note referred solely to commercial samples of powdered gum acacia.

Nux Vomica in Powder.—One gram of a sample treated by the methods advocated above gave results as follows :

Aliquot part method (50 c.c.)	Washing method (200 c.c.)	Insoluble Ash	Extractive Ash (50 c.c.)
gram	gram	grain	gram
0.121	0.260	0.005	0.005

Guaiacum Resin in Powder.—Commercial samples extracted with alcohol (90-per-cent.) yielded the following figures for

Insoluble Matter per gram.

(1)	0.157	(4)	0.070
(2)	0.168	(5)	0.110
(3)	0 188	(6)	0.170

Quassia-wood in Powder.—The dried residue from a cold-water extract of different samples was very variable, and the "infusion" in consequence was not uniform. The extractive yielded per gram by the "washing" method was small, being 0.010 to 0.030 gram.

Almonds in Powder.—The amount of nitrogen determined by the Kjeldahl process was 2.1 per cent., in place of 3.33 per cent. for sweet almonds and 3.44 per cent. for the bitter variety (which constants have been previously before the Conference). The sample was adulterated with a substance containing an abundance of starch.

The process is not claimed to be new, since it was advocated many years ago for the differentiation of coffee from chicory, and the principle has been used frequently since with many drugs, employing various solvents—*e.g.*, jalap (using alcohol).

The author thinks it may be found desirable to adopt in the Pharmacopœia the water-soluble figures for some of these common drugs.

Discussion.

Mr. Finnimore complained that the titles of papers should describe their contents. In this case "the effect of water on some drugs" would more accurately describe what was in it.

The President asked what was the adulterant of powdered acacia which sent up the ash so high?

Mr. W. B. Cowie sympathised with Mr. Finnemore's criticism. The paper contained a variety of subjects, and he thought the results which it recorded would have been of more value if the microscopic characters were also given. Without them the solubility figures were not of much use.

Mr. H. Noble remarked upon the low extractive which Mr. Alcock's gentians gave. In his experience gentian in the North of England yielded 40 to 43 per cent. of extractive.

Mr. Alcock having humorously replied to the criticism about the title of his paper, explained that the specimens were examined microscopically, and they gave the usual characters. He agreed with Mr. Noble about the percentage of extractive from gentian, 39 per cent. being the amount he expected, but he did not always get it, as the paper showed; the samples were as found on the market.

Mr. D. Lloyd Howard, who was called upon to read the next paper, showed authors what can be done in two minutes, that being the time he took to give an expressive account of a paper on the

Examination of Bismuth Salicylate for Free Salicylic Acid.

By J. Bristowe P. Harrison, F.I.C.

The statement in the "B.P. Codex" regarding partial decomposition of bismuth salicylate when using alcohol in the official test for free salicylic acid is confirmed by the author, but the alternative test—using benzol and chloroform, and shaking with very dilute solution of ferric chloride—is practically worthless. The reason is fairly obvious, since it is difficult to bring a few drops of aqueous ferric-chloride solution into intimate contact with a relatively large proportion of solvent, or if excess of ferric-chloride solution be used any small traces of salicylic acid are altogether masked by the reagent. With the following test no difficulty is found in detecting as little as 0.0001 gram of free acid intimately mixed with a bismuth salicylate previously giving no reaction :

> Shake up 1 gram of the salt in 10 c.c. of methylated ether (0.720), filter, transfer the clear filtrate to a glass dish, and evaporate the ether on a water-bath. The evaporation should be carefully watched, and the dish removed just as the last traces of ether are passing off, to avoid danger of loss of salicylic acid by volatilisation. Treat the residue with 0.5 c.c. of cold distilled water, and test with one drop of dilute ferric-chloride solution in the usual way.

A distinct crystalline residue was obtained on evaporation in the ether test when 0.1 per cent. of salicylic acid was

* Contained 23.65 per cent. of moisture.

present; with 0.01 per cent. the residue could just be detected, but the familiar violet coloration was decided on addition of the ferric chloride to the aqueous solution.

Results of Tests for free Salicylic Acid.

P.c. Salicylic Acid added	"Codex" Test		B. P. Spirit Test				Ather Test after Shaking	
	Chlorof.	Benzol	Before Shaking		After Shaking			
0.1	*V			S		D		D
0.05				S		D		D
0.02	No reaction	No reaction	Local violet coloration	S	Reddish-brown coloration	P	Permanent violet coloration	P
0.01				P		P		P
nil				P		P		nil

* Violet coloration at the separation-surfaee of the two liquids.

D=deep. P=present. S=strong.

In all the above tests one drop only of dilute ferric chloride solution was used. It is apparent that the chloroform and benzol tests fail and the B.P. test detects salicylic acid that has not been added, while the ether process is the only one approaching the ideal. The merits of the last test are further enhanced by the fact that the colorations obtained can be used quantitatively.

Discussion.

Mr. Naylor said this chemical had shown a very marked improvement over what was obtainable some years ago, when it was quite a common thing for bismuth salicylate to contain a considerable quantity of free salicylic acid. To-day the amount is exceedingly small, and there is also a considerable change as to the texture of the salt, so that it is found in retail pharmacies to lend itself better to the manipulations of dispensing.

Mr. J. R. Hill said the testing of the salt for free acid by means of benzol originated with Mr. Wm. Lyon, of Edinburgh, who found it exceedingly simple, as he could testify. The "B.P. Codex" recommendation to use chloroform was wrong, in so far as the alcohol in medicinal chloroform liberates a little acid. Mr. Lyon's method of applying the test is to put a small quantity of the sample on a filter-paper of clean texture, which is placed in a funnel resting in a cylindrical jar containing a very dilute solution of ferric chloride; benzol is then filtered through, and, floating on the surface of the ferric chloride, if there is free acid in the salicylate a violet film forms where the ferric chloride and benzol meet. Ether is also unsuitable for testing in this case, as it cannot be obtained free from alcohol and water.

Mr. J. P. Gilmour also commented upon the paper in the light of observations which he had made on the subject in a communication last year. He said the B.P. test is useless, as the small quantity of alcohol present in chloroform decomposes the bismuth salicylate, and gives positive results in samples with which the benzol method gave no traces. He had found no difficulty in observation, using the last method which was quite distinctive, and no doubt the new method is superior, but laboratory time for the test is important, and although theoretically the small amounts of free acid may not matter, except on account of its irritating effects, it was desirable to test for it and ensure purity of the drug.

Mr. Gilbert Simpson pointed out that the distinct advantage of Mr. Bristowe Harrison's method is that the test can be used quantitatively.

Mr. Hill said that could be done with Lyon's also, if time be given for the development of the colour.

Mr. Alcock said it was not wise to heat the ethereal solution at all, but to allow to evaporate, so as to be able to detect better the 0.01 per cent. of free salicylic acid.

Mr. Cowie corroborated Mr. Hill's remarks about Lyon's test being quantitative as well as qualitative, but it is not reliable. In the "Year-book" a few years ago a process was described which depends upon the liberation of iodine from a mixture of iodate and iodide, and estimating the free iodine. That he had found splendid.

Mr. Howard, in replying to the discussion, said that bismuth salicylate has undoubtedly improved these past few years, there being a demand for a better-looking salt. He thanked Mr. Hill for his interesting remarks, and as regards ether said that the new industrial methylated spirit should give a purer "720" methylated ether than was the case a few years ago.

End of the Day's Business.

The President closed the proceedings at 1.40 p.m., and said that the Conference would resume next day at 9.30 a.m. prompt, with Mr. Cowie's papers. The delay this morning, he added, "was not the fault of the President."

Business of Wednesday, September 16.

At forty minutes past nine this morning the President opened the proceedings by intimating that Mr. Hooper's paper on "Charas" would be read in abstract by Mr. White. This, and the remarks upon it, took up nine minutes; then Mr. W. Beaversly Corrie, of Edinburgh, at 9.51 began an abstract of the first of four papers he had about jalap and scammony resins, and ether, and he and his critics held the field until 11.45, when Mr. Albert Simpson told how blue the pill of commerce is found on the whole, and at 12.17 p.m. the Conference had a brief application of blue ointment, which was followed three minutes later by Mr. J. P. Gilmour taking the members back to the aboriginal Scots' medicine and the progress of Caledonian pharmacy to the present day (seventeen minutes). Another ten minutes sufficed to polish off the rest of the papers; then votes of thanks, etc., occupied the members until two o'clock or thereabouts. Returning to the beginning, we should note that the President said, in regard to the 'Charas" paper, that he was pleased his old friend Mr. Hooper had contributed it. They had worked together at the same bench in Bloomsbury Square, and besides being an ardent student Mr. Hooper was a champion "wash-bottler." (Laughter.)

The abstract was then given to an audience of about thirty, which slowly increased as the proceedings continued.

Charas of Indian Hemp.

By David Hooper, F.C.S., F.L.S.

Although "charas" has been properly described as "a foul and crude drug, the use of which is properly excluded from civilised medicine," it is imported into British India to the value of 120,000*l.* per annum, a total exceeding the combined value of all the other medicinal imports, so that it is an article which deserves more than passing notice. Indian hemp (*Cannabis sativa*), when grown in the East, secretes an intoxicating resinous matter on the upper leaves and flowering spikes, the exudation being marked in plants growing throughout the Western Himalayas and Turkestan, where charas is prepared as a commercial article. Formerly it was cultivated in fields in Turkestan, but now it is grown as a border around other crops (such as maize), the seeds of both being sown at the same time. A sticky exudation (white when damp and greyish when dry) is found on the upper parts of the plant before the flowers show, and in April and May, when the plants attain a height of 4 or 5 ft. and the seeds ripen, the cannabis is gathered, after reaping the crops, and stored in a cool, dry place. When dry the powdery resinous substance can be detached by even slight shaking, the dust being collected on a cloth. In some districts the plants are cut close to the roots, suspended head downwards, and the dust or *gard* shaken from them and collected on sheets placed on the floor. The leaves, seeds, etc., are picked out, and sand, etc., separated by passing through a fine sieve, the powder being collected and stored in cloth or skin bags, when it is ready for export. In some villages the charas or extract is made up into small balls, which are collected by the middleman:

On reaching British territory all charas is weighed before the nearest magistrate, by whom it is sealed, a certificate of weight signed by the Deputy Commissioner being given to the owner. The trader, before leaving the district, obtains a permit allowing him to take the drug to a special market. The zamindars of Chinese Turkestan are the vendors of the drug, the importers being Yarkhandis or Ladakhis, who dispose of it at Hoshiapur and Amritsar principally, returning with piece-goods, or Amritsar merchants who trade with Ladakh. The drug in this way reaches the chief cities of the Punjab during September and October. Thence it is distributed over the Central and United Provinces as far as Bombay and Calcutta, and is used everywhere for smoking. Charas, though a drug, plays the part of money to a great extent in the trade that is carried on at Ladakh, the price of the drug depending on the state of the market, and any fluctuations causing a corresponding increase or decrcase in the value of the goods for which it is bartered. The exchange price of charas thus gives rise to much gambling. A pony-load (two pais or three maunds) sells for Rs. 40 or Rs. 50, the cost of transport to Hoshiapur (the chief Punjab depôt) is Rs. 100, and there it fetches from Rs. 30 to Rs. 100 per maund. Retail dealers sell small quantities at a price that works out at Rs. 200 to Rs. 500 per maund. Five years ago the Kashgar growers, encouraged by the high prices, sowed a large crop and reaped a bumper harvest, only to find the market already overstocked and prices on the Leh Exchange fallen from Rs. 60 to Rs. 30 per maund. The following are the imports of charas from Ladakh and Kashmir between 1904 and 1907 :

	1904-5	1905-6	1906-7
Cwt. ...	2,818	2,446	2,883
Value ...	Rs. 12,13,860	Rs. 18,39,960	Rs. 22,90,560

Small quantities of charas are made, chiefly for local consumption, in the Himalayan districts of Nepal, Kumaon, and Garhwal, and in Baluchistan. Samples of Baluchistan charas made in the Sarawan division of the Kalat State have been sent to the Indian Museum by Mr. Hughes-Buller. The following is the mode of preparation :

> The female "bhang" plants are reaped when they are waist high and charged with seed. The leaves and seeds are separated and half dried. They are then spread on a carpet made of goats' hair, another carpet is spread over them and slightly rubbed. The dust containing the narcotic principle falls off, and the leaves, etc., are removed to another carpet and again rubbed. The first dust is the best quality, and is known as *nup*; the dust from the second shaking is called *tahgalim*, and is of inferior quality. A third shaking gives *gania*, of still lower quality. Each kind of dust is made into small balls, called *gabza*, and kept in cloth bags. The first quality is recognised by the ease with which it melts.

The local rates per tola are—for first quality 2a. 5p., second quality 1a. 7p., and third quality 11p. Small quantities of charas find their way from Thibet into British and Native Garhwal, and a little is prepared in Simla and Kashmir; while other sources are Nepal and the hill districts of Almora and Garhwal. In preparing Nepal charas, the ganja-plant is squeezed between the palms of the hands, and the sticky resinous substance scraped off. *Momea*, black wax-like cakes, valued at Rs. 10 per seer, and *Shahjehani*, sticks containing portions of leaf, valued at Rs. 3 per seer, are the two kinds of Nepal charas, a few maunds being exported annually to Lucknow and Cawnpore. No charas is made in the plains of India, except a small quantity in Gwalior, the Bengal ganja yielding no charas in all the handling it undergoes in the process of preparation—thus emphasising the fact that the intoxicating secretion is developed in plants growing where the altitude and climate are suitable, as in the Himalayas and Turkestan.

Adulterations.—Aitchison in 1874 stated that no charas of really good quality ever came to Leh, the best charas in the original balls being sent to Bokhara and Kokan. He said the chief adulterant is the mealy covering of the fruits of the wild and cultivated Trebizond date (*Elæagnus hortensis*). The impression in the United Provinces and the Punjab is that the Yarkhand drug is sophisticated, and a preference is given in some quarters to the Nepal and other Himalayan forms, which command a higher price. The Special Assistant in Kashgar declares there is no advantage in increasing the weight, as when dealers in India buy the drug they test it, otherwise they would pay a heavy duty on the adulterant as well as on the charas itself; so no exporter at present would spoil his charas by adding extraneous substances.

Mr. Hooper added descriptions of samples—namely, Kashgar charas, Yarkhand charas, Baluchistan charas, Gwalior charas, Kumaon charas, Garhwal charas, Nepal charas, and Momea charas, from Simla.

Chemical Examination.—The table of analyses appended is taken from the author's report to the Indian Hemp Drug Commission of 1893-4, but a few recent analyses have been added :

Description of Charas	Extract, Alcoholic	Vegetable Matter	Ash, soluble	Sand	Volatile Matter
Yarkhand	40.0	18.2	23.9	11.4	6.5
Amballa "Mashak" ...	42.7	12.9	12.4	28.2	5.8
Amritsar "Bhara" ...	38.1	14.9	10.8	29.8	6.4
,, "Mashak" ...	46.5	12.6	10.0	27.3	3.6
Delhi dust, 12a. ...	42.4	17.9	9.8	25.9	4.0
,, ,, 1r. 1a. ...	42.6	18.8	11.1	23.2	4.3
,, ,, "Mashak" 1r. 9a.	41.1	11.3	10.7	29.5	7.4
Bombay	36.1	20.2	11.8	27.3	4.6
Gwalior	43.3	27.7	8.2	17.7	3.1
Kumaon (wild)... ...	22.4	52.0	9.2	7.4	9.1
,, (cult.) ...	34.2	46.3	9.0	3.0	7.5
Garhwal...	41.9	37.0	7.9	5.5	7.7
Almora	36.9	40.5	10.5	4.6	7.5
Nepal	44.6	35.1	8 2	6.5	5.6
,, "Shahjchani"...	44.4	37.7	9.6	4.1	4.2
Simla "Momea" ...	37.0	32.0	12.3	9.3	9.4
Baluchistan (1) 1903 ...	22.4	19.9	14 8	38.6	4.3
,, (2) ,, ...	22.0	37.2	20.8	15.1	6.9
,, (3) 1905 ...	24.2	16.0	13.3	39.3	7.2
,, (4) ,, ...	26.0	24.1	9.6	31.0	9.3
,, (5) ,, ...	24.9	27.3	11.5	25.8	10.5
Kashgar (1)	40.2	21.1	9.2	16.8	12.7
,, (2)	40.9	16.3	9.9	20.5	12.4
,, (3)	48.1	15.6	8.2	16.1	12.0

According to Flückiger and Hanbury, charas yields one-fourth to one-third of its weight of amorphous resin, and it has been stated that good samples yield 78 per cent. of resin. It will be seen above that the average yield in the North Indian samples is 40 per cent., the highest being from Kashgar and the lowest from Baluchistan and from Kumaon wild plants, the last-named corresponding to a good sample of ganja.

Physiological Values.—Captain J. F. Evans, I.M.S., Chemical Examiner to the Government of Bengal, also gave results of his physiological tests in the Indian Hemp Drug Commission's Proceedings for 1893-4. His experiments were made with alcoholic extracts, and only one sample—Amritsar best charas—approached in definite physiological effects the extract, taken as a standard, prepared from Bengal ganja. The following are the values compared with that of Amritsar mashak, designated as 32 :

Amritsar Mashak	32	Bombay	4
Delhi Mashak	24	Amballa Mashak	2
Amballa Mashak	23	Delhi dust	2
Garwhal	21	Kumaon, wild	1
Delhi dust (2nd)	20	Kumaon, cultivated ...	1
Amritsar Bhara	19	Gwalior	1

so that the best Amritsar charas is thirty-two times as potent as the Gwalior product, the latter from plants grown in the plains, while the amount of alcoholic extract bears no relation to the physiological activity of the drug.

Discussion.

The President, on opening the discussion, said that Indian hemp and its allied products are notoriously variable, and in considering them their two-fold nature had to be kept in mind—first their inherent variability, and also the fact that some persons are immune to the action of the drug. The active constituents had been well studied, especially by Professor Marshall, whose work on *Cannibinol* he mentioned, and he concluded that he felt that the ultimate solution of the *Cannabis indica* difficulty will be in the preparation of an extract of the drug in India, where it is fairly constant in strength. The President then asked Mr. Dott to speak on the subject, remarking that he was pleased to see him present.

Mr. Dott, in response, said his only contribution to the discussion would be that once he had suggested to Professor Stockman that he should investigate *Cannabis indica*, and he replied that he would not do so, as the drug is of no use. (Laughter.)

Mr. Edmund White drew attention to the analogy between cannabis indica and digitalis, and said that possibly the altered activity according to age was due to enzymes and such preparations should be stored or kept in such a condition as to preclude enzyme activity. He suggested that the drug should be imported as alcoholic extract in small sealed tubes. Mr. White then gave an abstract of the following :

Notes on Some B.P.C. Formulas.

By Harold Wyatt, Ph.C.

The notes are submitted in order to give rise to a discussion, and the author hopes that they will be regarded as records of personal experience, and not as embodying new methods or describing any new discoveries.

Elixir Pini et Terpini et Acetomorphinæ.—The addition of the acetomorphine hydrochloride in solution to the filtered elixir, before making up to volume, results in a better preparation, and the use of 5 per cent. of concentrated infusion of senega prevents any precipitation of the pine oil and terpine hydrate upon dilution with water. Liquid terpine, as used on the Continent, is more manageable than terpine hydrate in crystals, and, while being medicinally as active as the hydrate, the liquid preparation possesses a pleasant flavour.

Liquor Seriparus.—An essence equal in activity, and superior as regards smell, is obtained when made from the fresh rennets according to the following method :

Rennet, fresh	30.00
Kaolin	2.50
Alcohol	10.00
Sherry	10.00
Glycerin	10.00
Salt	10.00
Lactic acid	0.315
Chloroform-water to	100.00

Rub the rennet well with the salt, cut it up into small pieces, and macerate with 50 of the chloroform-water and 10 of glycerin for four days; then add the alcohol and sherry. Allow to stand three days and strain. Next shake with kaolin 2.5 and set aside for a week. Finally decant the clear solution, filter the remainder, add the lactic acid, and make up to the required volume with chloroform-water.

Mistura Sennæ Composita.—A note concerning the use of aromatic spirit of ammonia is the reason for including this pharmacopœial preparation and giving the following alternative method suitable where quantities are required for stock :

Magnesium sulphate	25.00
Liquid extract of liquorice	5.00
Compound tincture of cardamoms	13.00
Strong tincture of ginger (1 to 2) ...	2.00
Chloroform	0.21
Strong solution of ammonia ...	0.62
Senna	10.00
Boiling water to produce	100.00

Mix the magnesium sulphate with the senna and pour on 50 of boiling water. Stir in the solution of ammonia when the infusion has cooled to blood heat. Strain when cold and wash the dregs with enough boiling water to make the strained infusion 80 when cold. To this add the tinctures, with the chloroform dissolved in them, then the fluid extract of liquorice, and make up to 100 if necessary.

The "B.P. Codex" note carries no conviction to the author : the ammonia in the method given or in the official formula remains as ammonium hydrate or carbonate for such a short period of time in contact with the senna that it is unlikely any weakening occurs of the laxative powers of the preparation. In fact, the ammonia precipitates the magnesium present as hydrate and carbonate, which carries down the mucilaginous matter partially deposited by the alcohol of the tinctures, leaving the mixture faintly alkaline —enough to hold the glycyrrhizin of the liquorice extract in solution—and the ammonia is present as sulphate. In consideration of the action of alkali upon the principles of such drugs as senna, cascara, rhubarb, and podophyllum, the presence of traces or large excess of alkali should be differentiated, since it is understandable that the latter condition may result in progressive decomposition. The above method has been in use for at least thirty years, and the efficacy of the preparation has never been questioned.

Succus Rubi Idæi.—Raspberry-juice is of greater general utility than mulberry in the preparation of elixirs, etc., and, it might be added, a juice of fine flavour may be prepared as follows :

Allow the picked raspberries to ferment for three or four days in a lightly covered jar until carbonic-acid gas is freely evolved and a light green mould has nearly covered the exposed surface of the berries. Remove the mould carefully and the fruit beneath to the depth of an inch, and turn remainder on to a muslin strainer. When the juice ceases to drip, gently squeeze out the remainder and heat on a water-bath to 90° C. Filter, and to the cooled juice add 25 per cent. of alcohol.

The heating possibly impairs the flavour, but, if not objected to, the addition of one-third of alcohol to the juice in seven days' time after straining and filtering suffices to keep the preparation. The following is an example of

Elixir containing Succus Rubi Idæi.

Tincture of vanilla	0.25
Alcohol	24.00
Tincture of cudbear	1.00
Sugar	48.00
Raspberry-juice	100.00

Make by percolating the mixed liquids through the sugar.

Syrupus Glycerophosphatum Compositus.—The modified formulæ containing acetic acid or glycerophosphoric acid instead of citric acid are satisfactory, though complaints are met with of mysterious precipitates and of preparations that will not remain clear. The directions for the "Supplement" formula give a very good syrup if the right ingredients are used, although it is several shades lighter than the older formula, as the latter contains at least five times as much cudbear. With the old formula, half the amount of cudbear (0.62) is ample for colouring if extracted properly with 40 of boiling water and 10 of glycerin, filtering, and dissolving the salts with the aid of acid—except the glycerophosphate of iron, which is then added in solution—and percolating the resultant liquor through the granulated sugar. There is no necessity for the chloroform, except as a flavouring-agent, and it might with advantage be replaced by orange-flower water or vanilla or rose flavours.

Syrupus Glycerophosphatum cum Formatibus.—Modified by the substitution of 4 parts of formic acid (25 per cent.) for the acetic acid, with the addition of 10 per cent. of glycerin and the use of 6 per cent. of undiluted orange-flower water or 3 per cent. of cherry-laurel water for flavouring-purposes. The glycerin acts as a preservative and prevents crystallisation (being added with advantage to most compound syrups). If made without strychnine hydrochloride, the preparation is pleasant-flavoured and readily taken by children.

Discussion.

The President made a few comments and then called upon the author to give an abstract of the following paper :

Jalap Resin: the Examination and Valuation of.

By W. B. Cowie, Ph.C., F.C.S.

The pharmacopœial tests for jalap resin are confined to an ether-solubility test to detect scammony, Mexican scammony, or Tampico jalap resins, a turpentine test for colophony, and a ferric-chloride test for guaiacum resin. The U.S.P., in addition, gives limits for moisture, acid resins, and saponifiable substances, with the melting-point of the anhydrous resin and an ammonium-hydroxide test for colophony; but the last-named test is so unsatisfactory, if rigidly applied, as invariably to exclude the highest-quality resins. The following scheme of valuation yields fairly concordant results :

(*a*) Dry about 5 grams of the resin to constant weight at 110° C.

(*b*) Determine the ash in about 1 gram of the anhydrous resin.

(*c*) Weigh out 1 gram of anhydrous resin, powder in a glass mortar, add 10 c.c. of 0.720 ether, and stir assiduously for two and a half minutes; pour off the ethereal solution through a plug of cotton-wool into a tared flask. Repeat with three more quantities of 10 c.c. of ether, ten minutes being allowed for the four digestions, and the mass being thoroughly broken up each time. Wash the cotton-wool with 5 c.c. of ether, recover the ether, and dry at 110° C. until the weight is constant.

(*d*) Weigh out 1 gram of anhydrous resin, dissolve in

30 c.c. of accurately neutralised alcohol (90-per-cent.) at 15° C., titrate with seminormal alcoholic solution of potassium hydroxide, using phenolphthalein as indicator, note the volume required to complete neutralisation, and calculate the acid-value. Add 25 c.c. of seminormal alcoholic potash solution, boil under reflux condenser for an hour, and titrate back to phenolphthalein with seminormal solution of hydrochloric acid. The difference in volume in cubic centimetres between the blank check and the actual experiment, divided by two, gives the volume of normal alkali fixed by the resin during the saponification, and the saponification equivalent = $\frac{\text{milligrams of resin used}}{\text{c.c. of normal KOH required}}$.

(*e*) Dissolve 0.25 gram of resin in 5 c.c. of acetic anhydride, and add two drops of strong sulphuric acid. No purple coloration indicates absence of colophony.

(*f*) A small portion of resin, moistened with alcohol, should give no greenish-blue colour on adding a few drops of ferric-chloride solution, showing absence of guaiacum resin.

(*g*) Water triturated with a little resin should not become coloured or dissolve any of it (absence of soluble impurities), and possess no bitter taste (absence of aloes). After boiling and cooling, with the addition of a few drops of iodine solution, no blue coloration should be given (absence of starch).

The following results were obtained on the examination as above of

Resina Jalapæ.

Kind of Resin	Moisture percentage	Ash p.c.	Ether-soluble p.c.	Acid-value	Sapon. Equiv.
(1) Alba	3.0	0.02	0.3	2.8	417
(2) Alba	3.1	0.022	0.3	2.8	417
*(3) Jalapin ...	—	—	—	2.8	408
(4) Fusca... ...	5.0	0.3	10.0	14.0	333
(5) Fusca... ...	5.6	0.3	10.0	11.2	338

* Ether-insoluble portion of pure jalap resin.

Moisture.—Excellent results are obtained at 110° C., but lower temperatures are insufficient. The U.S.P. states that "jalap resin should not suffer any material loss of weight at 100° C.," and the author is not prepared to say what that amount would be; but in good resins the moisture may vary from 2 to 9 per cent., according to age, purity, and storage, and good resin, if well stored, should not contain more than 6 per cent.

Ash.—All the samples gave exceptionally low amounts. No ash-limit is given in the U.S.P., and 1 per cent. is suggested as the limit for adoption in the B.P.

The Ether-solubility Test is unsatisfactory in its present form without any definite instructions, but under proper conditions, as suggested above, would give good and reliable results, the important points being (1) definite weight of anhydrous resin, (2) definite volume of dry ether, (3) uniform treatment for a definite period of time. The stirring method gives better results than the maceration process, besides saving time.

Rate of Solubility.—In order to obtain a fair estimate, 1 gram of anhydrous resin was assiduously stirred for two and a half minutes with 10 c.c. of 0.730 ether in a small mortar, the ethereal solution run into a tared beaker, evaporated, and dried at 110° C. This was repeated ten consecutive times.

Amounts of Resin Dissolved.

Gram	P.c.	Gram	P.c.
(1) 0.048	= 4.8	(6) 0.0015	= 0.15
(2) 0.0035	= 0.35	(7) 0.0015	= 0.15
(3) 0.0025	= 0.25	(8) }	
(4) 0.0015	= 0.15	(9) }	Nil
(5) 0.0015	= 0.15	(10) }	

Total amount from 1 gram = 0.60 gram = 60.0 per cent.

From the above results it is evident that the solvent action goes on for some time when alcoholic ether is used, and another series of experiments was made to find if there is any real difference in the solubilities of jalap resins in ethers of different strength in (*a*) the anhydrous state and (*b*) the ordinary condition. One gram of anhydrous resin and the same quantity of ordinary resin (containing 4.5 per cent. of moisture) were treated separately and consecutively with 40 c.c. each of 0.720, 0.730, and 0.735 ethers.

Percentages of Jalap Resin Dissolved by different Ethers.

—	0.720	0.730	0.735
Anhydrous	0.3	2.25	9.0 to 11.5
Moist (4.5 p.c.) ...	0.3	2.25	6.6 to 9.15

The moisture apparently has no effect upon the solubility of the resin when using dry ether, being probably taken up by the ether; but time did not permit further work on this point, which is worthy of more investigation.

The Acid-value is a measure of the free acids in the resin, and acts as a check on the manufacturers' method of purification and to detect any added acid resins. The amount of acidity in the pure resins was so constant that it was considered probably natural acidity, and therefore 0.1 c.c. of seminormal KOH per gram was carried over to the saponification-equivalent, but all higher amounts were deducted as being due to want of purification or to the presence of foreign acids or resins. The acid-values [requiring 0.5 c.c. (U.S.P. limit) and 0.4 c.c. of seminormal KOH] were higher for the brown resins, and 0.4 and 0.3 c.c. were respectively allowed to obtain a fair saponification-equivalent, as the acid substances would probably be removed on further purification of the resin. The U.S.P. acid-limit is too high for white and too low for brown resins. The acid-values suggested are 8.4 for white and 20 for brown. The figures for the acid-values and saponification-equivalents emphasise the fact that concordant results are easily attainable, due in great measure to precisely the same conditions for the blank experiment and eliminating otherwise unavoidable errors due to the reagents—a point missed in the U.S.P. in an otherwise excellently initiated method.

The Saponification-equivalent.—The figures—408 for jalapin and 417 for the white jalap resin, with only 333 and 338 for the brown jalap resin—appear at first paradoxical, but on closer examination it will be seen that they are correct. The impurity in the white resin gives the increase, while in the brown resin the impurity is chiefly scammonin, which has a much lower saponification-value.

Colophony, Guaiacum, Aloes, and Starch.—No indications of these substances were obtained, but the tests should be given in an authoritative work such as the B.P. to detect more easily added adulterants.

Physical Constants of Jalapin and White Jalap Resin.

Substance	Melting-points		Optical Rotation
	Incipient Fusion	Complete Fusion	
Jalapin	145° C.	150° C.	$[\alpha]_D - 39.5$
White resin ...	145° C.	150° C.	$[\alpha]_D - 37.5$

The figures indicate that white jalap resin as found commercially, after removal of moisture and ash, is, for practical purposes, jalapin.

Relative Valuation.—For this purpose the jalap resins require to be placed in two distinct classes—(*a*) white jalap resin, almost free from scammonin, and (*b*) brown jalap resin, containing varying amounts of scammonin. The relative values of the white resins may approximately be given in terms of the percentage purity (based on saponification-equivalent of 408 for pure jalapin) by the formula:

$$\text{Relative value} = \frac{408 \times 100}{\text{sapon. equivalent of resin investigated}}.$$

For example, with resin of saponification-equivalent of 420 the approximate percentage purity is

$$\frac{408 \times 100}{420} = 97.14.$$

The relative values of the brown resin cannot be judged in this simple manner owing to the greater number of

impurities, but the author intends to continue his investigations in this direction.

DISCUSSION.

Mr. NAYLOR wished to know, had any specific value, other than that of a relative value as the acid resins and indifferent resins, appeared fairly constant. Mr. Cowie's remark, that scammony and jalapin could be distinguished by colour, he did not agree with, at least with commercial articles.

Mr. DOTT said it is rather unfortunate that successive Pharmacopœias have described as ether a mixture of alcohol and ether which, as regards solubilities, has the properties of its constituents. With respect to getting rid of the last traces of moisture in residues they can be got rid of in vacuo.

In reply to Dr. Coull, Mr. COWIE said that 408 (not 480) was the correct saponification equivalent of No. 3 sample.

THE PRESIDENT thought that attention should be paid to the point that the solubility of resins diminished as they were kept.

Mr. ALCOCK, speaking about dehydration of such things as alcohol, said at the Bristol Conference by Dr. Sydney Young on the dehydration of alcohol, using benzol might be applied to resinous drugs in ridding these substances from moisture. Again, the weight lost at 110° C. may not be moisture *per se*, but also volatile matter, as would be the case in drying saffron at the temperature. By means of drying at 100°, then increasing to 110°, and then leaving exposed to air for some time might allow determination of the actual amount of moisture present, as differentiated from volatile substances.

Mr. DUNCAN wished to know what Mr. Cowie meant by jalap resin and if it was made according to the B.P. method. In the paper, jalap resin, jalapin, and colourless jalap resin are described, and in his opinion the official jalap resin must be that made according to the Pharmacopœia. The use of industrial alcohol as a solvent in the preparation of the jalap resin produces a substance which has not all the specifics of the official resin and not strictly B.P.

Mr. COWIE said he had kept in view during his work standards based upon the natural products. The moisture (as stated in the paper) depends upon the storage and not upon the manufacturing method, although a badly prepared specimen retains more moisture due to larger proportion of extractive matter. The pure resin also absorbs resin very rapidly, the increase in weight during weighing of the anhydrous resin being perceptible unless extreme care be practised. Jalap resin was an extremely complex substance, the determination of the amounts of sugar and volatile acids varied so much that further investigation was abandoned. The acid value is of little importance, but serves as a check on purity and on the presence of acid resins. The U.S.P. limit was quite sufficient for white resins, but too little for brown resins. The acid value must, however, be determined before proceeding to saponification, and allowed in calculating the latter value. With regard to the use of dry ether, as said by Mr. Dott, he had found it difficult to find references. He did not know whether Dr. Coull's sight or hearing is defective, but he would find the figure accurately in the paper. On allowing the dry resins to re-absorb moisture the amount varied from 10 per cent. upwards. Dry at 110° C. gave very constant results, too constant for the presence of any volatile matter, and no odour was noticed during drying. The resins used were B.P. brown resin, far from pure (10 per cent. soluble in 0.720 ether), and the white commercial resin (0.3 per cent. ether soluble).

Mr. DUNCAN : Are we discussing resina jalapæ, and what is the mode of preparation of the white resin?

Mr. COWIE : Both resins. The white resin was decolourised in the ordinary way with animal charcoal.

The PRESIDENT said the discussion was exceedingly interesting and the subject evidently not yet exhausted.

The next paper read was

Scammony Resins: the Examination and Valuation of.

By W. B. COWIE, Ph.C., F.C.S.

The criticism on the B.P. and U.S.P. tests in the author's paper on "Jalap Resin" applies with equal force to those for scammony resin in everything but the ether-solubility limit, which does not possess the same significance in the case of scammony resin. The scheme outlined in the above paper also applies without modification, except in paragraph (*c*).

One gram of the white resin should be entirely soluble in 15 c.c. of ether (0.720); and the brown resins should be soluble to the extent of 95 per cent. on the anhydrous resin dried at 110° C.

Resina Scammoniæ.

Kind of Resin	Moisture percentage	Ash p.c.	Ether-soluble p.c.	Acid-value	Sapon. equiv.
(1) Alba ...	2.52	0.02	Complete	2.8	241
(2) Alba ...	5.3	0.02	,,	2.8	241
*(3) Scammonin	—	—	,,	2.8	240
(4) Fusca ...	4.5	0.15	96.4	28.0	263
(5) Fusca ...	5.1	0.15	96.4	25.25	263

* Pure, prepared as below.

Pure Scammonin was prepared by dissolving anhydrous white scammony resin in 0.720 ether, the ether being recovered and the residue dried at 110° C. to a constant weight. The physical constants of Scammonin and white scammony resin were then given.

DISCUSSION.

Mr. WILLIAM DUNCAN expressed his delight to find that Mr. Cowie's work in comparison with his own done some time ago for the North British branch was on different substances from what he worked with—B.P. scammony resin. Mr. Cowie had not worked on that.

Mr. COWIE said samples 4 and 5 were printed in the paper as res. scammon. *alba* instead of *fusca*.

Mr. DUNCAN : Was it pure B.P. scammony resin?

Mr. COWIE : The B.P. resin is not pure.

Mr. DUNCAN was endeavouring to show that what he said was perfectly simple and clear, when the PRESIDENT remarked that he must accept what Mr. Cowie said he worked with—Resina scammonii fusca.

Mr. DUNCAN, continuing, said the paper left the subject in confusion worse confounded, and he thought the Conference might appoint a committee to go into the whole subject and exclude from it Messrs. Cowie, Duncan, and Umney. (Laughter.) He proceeded to explain some points which he had discused personally with Mr. Cowie, and stated that he had a few days ago sent Mr. Cowie a sample of pure scammonin and he found the melting-point to be 120°. "I made it 131°," said Mr. Duncan amidst roars of laughter, which continued to punctuate his further explanation. "I sent some to Mr. Hill, as I had confidence in him—in certain things, including melting-points—not telling him what it was, and to my delight he got it exactly the same as I did, and I think that in this case Hill and Duncan are to be relied upon."

Mr. E. WHITE gave a note of warning in regard to acetic anhydride, there being some confusion in the trade about the matter, and there is a risk of getting glacial acetic acid for it.

Mr. J. R. HILL said that while it was quite true that the substance he received from Mr. Duncan gave the melting-point 131°, he doubted very much if in the case of complex substances, like scammony and jalap resins, melting-points are of much use. It is quite easy to see as the temperature rises that changes are going on.

The PRESIDENT : That is the point of the whole thing.

Mr. COWIE, in replying to a question which had been put by Mr. Finnemore as to how he prepared crystallised scammonin, said it was done by dissolving white scammony resin in dry ether and crystallising. He touched upon the acetic anhydride matter, and said that the effect of all that Mr. Duncan had said was to leave a misunderstanding about the substances he had examined, for which there was no occasion, seeing that it was commercial products he had dealt with. As to the melting-point, it was necessary to agree first upon the method best suited for the purpose; that was given in the papers and if Mr. Duncan would try it he would find that they were not so far out. But what method, he asked, had Hill and Duncan used?

Mr. DUNCAN : I told you, Mr. Cowie, my method last Saturday.

Mr. Cowie hereupon said it was like something that Professor Pirrie had said to a girl patient: "My dear young lady, is you any better since I touched you with yon."

Mr. Duncan repeated that he told Mr. Cowie his method was to float a micro-glass slip with the resin on mercury, heat it, and note the temperature when it melts.

The President then briefly closed an amusing argument, and called for the next paper.

Mexican Scammony Resin.

By W. B. Cowie, Ph.C., F.C.S., and B. M. Brander.

A specimen of resin prepared from a quantity of drug presented by Messrs. Evans Sons Lescher & Webb, Ltd., was examined before (1) and after purification (2), along with a commercial sample (3), according to the scheme suggested by one of the authors for the valuation of this and similar resins.

The authors consider from the results that the resin consists of jalapin and scammonin, with another resin of lower melting-point, the presence of the latter being confirmed by the altered saponification-equivalents, rotatory powers, and melting-points on continuing the purification of the resin.

Discussion.

Mr. Duncan said that his observations on the orizaba-roots was to the effect that they come from different sources. There appears to be a number of roots brought into the market under the name. The work that he did gave him a resin which was soluble in pharmaceutical ether "735." There are other bodies, and they play a part in the reaction, but by treating the resins with carbon bisulphide one finds that some are more soluble, and the pink reaction is obtained with sulphuric acid. As to the melting-point, there is no variation, but there may be in the man who takes it.

Mr. Alcock was proceeding to suggest that Nordhausen sulphuric acid should be used for the pink reaction, when Mr. Finnemore said that he had already stated 57-per-cent. acid was sufficient.

Mr. Cowie, in reply, said the difficulty in the whole matter is the ether used, which would appear in his next paper. In the acid test the pink colour is obscured by brown resins, but it is all right with white resins.

The President thanked the authors and suggested that Messrs. Duncan and Cowie should work together on the chemistry of the resins. He called for the next paper on

Commercial Ether.

By W. B. Cowie, Ph.C., F.C.S., and T. O. Broadbent.

In some work on scammony and jalap resins it was found difficult to meet with an ether sufficiently free from alcohol, water, etc. A representative gathering of commercial ethers was collected before the desired product was obtained, and the authors examined them, as the results might be of interest:

Kind of Ether	Alcohol	Aldehyde	Turbidity due to H_2O	Solubility p.c.	B.p. Start	B.p. Finish	Specific Gravity
Pure							
(1) 0.720 ...	St.	St.	N.	1.5	34°	37°	0.720
(2) 0.720 ...	Dt.	V.F.	Sl.	1.5	34°	38°	0.720
(3) 0.720 ...	N.	N.	N.	1.5	34°	40°	0.720
Meth.							
0.717	St.	V.S.	T.	7.0	31°	33°	0.717
(1) 0.720 ...	Sl.	N.	N.	5.0	32°	37°	0.725
(2) 0.720 ...	Sl.	F.	Sl.	1.5	31°	40°	0.720
(1) 0.730 ...	Dp.	Sl.	T.	6.5	33°	66°	0.730
(2) 0.730 ...	V.D.	Sl.	T.	6.5	32°	71°	0.730
(1) 0.735 ...	St.	St.	T.	16.5	33.5°	76°	0.735
(2) 0.735 ...	V.S.	St.	T.	16.0	33°	67°	0.735
(3) 0.735 ...	V.S.	Sl.	T.	14.0	33°	77°	0.737

No hydrogen peroxide was found in any of the samples.
The alcohol and aldehyde indications are for colorations.
Abbreviations: Dp. = deep. Dt. = distinct. F. = faint. N. = nil. Sl. = slight. St. = strong. T. = turbid. V.D. = very deep. V.F. = very faint. V.S. = very strong.

The following tests and reagents were used:

Alcohol.—Aniline violet, which gives excellent results.

Aldehyde.—Potassium hydrate: a searching test if sufficient time be given.

Hydrogen Peroxide.—Bichromate of potassium, which is a reliable test; but none of the ethers gave the slightest indication.

Water.—Carbon bisulphide: an excellent and reliable test.

Solubility in Water.—Distilled water saturated with ether. Recommended as an excellent method for busy pharmacists, as it gives a fair idea of the ether in a single test.

Boiling-point.—The most reliable test of all, as it reveals the presence or absence of methyl ether, alcohol, water, and acids in one step.

The pure ethers were good except No. 1, which gave a strong aldehyde reaction. The methylated ethers, sp. gr. 0.720, were quite suitable as solvents for the examination of jalap and scammony resins, and it is an improvement to adopt them in place of the alcoholic 0.735 ether for all purposes for which methylated ether is used.

Discussion.

The President said he saw no reason why we should not have anything but pure ether in the British Pharmacopœia.

Mr. R. R. Bennett objected to that, because ether is required for anæsthetic purposes and for other medicinal purposes in which a little alcohol is immaterial. He asked Mr. Cowie how the potash-test for aldehydes had been applied.

Mr. Branson suggested that instead of distillation limits the amounts distilling at several temperatures should be given.

Mr. D. Lloyd Howard remarked upon the great uncertainty as to the composition of the various commercial ethers and the confusion which exists as to what is "ether," especially methylated ether. He agreed that the 735 article should be removed from the Pharmacopœia, as 735 methylated ether is of very uncertain composition. The potash-test for aldehydes depends upon the length of time the reagent and ether are in contact. A small fragment of potash should remain in the ether for twelve hours before a conclusion is arrived at. Mr. Howard proceeded to state that 717 ether is a special thing, containing, probably, ethyl-methyl ether, and was introduced for local anæsthesia. It is difficult to obtain any ether without traces of alcohol and water; but all his experience went to show that, saving these traces, 720 ether is now produced free from impurities.

Mr. Finnemore joined in the objection to the removal of 735 ether from the B.P., saying that it was used to make collodion, and there would be no sense in removing alcohol and then adding it again.

Mr. Alcock recalled Mr. A. W. Gerrard's paper, in which the presence of hydrogen peroxide in ether was referred to, which impurity liberates iodine when an ethereal solution of iodoform is made.

Mr. White corroborated Mr. Howard's remarks, saying that there are two distinct 720 ethers, one containing methyl ether, alcohol, and water, and the other pure ethylic oxide, and by asking for purified methylated ether one can get it at one and a half to twice the price of the former article, which is a mixture of four substances in varied proportions.

Dr. Coull protested on commercial points against the exclusion of 735 ether from the B.P.

Mr. Cowie then answered the points put to him, concluding that if the 720 ether only is official alcohol could be added to it when required.

The President, summing up, said all they wanted in the B.P. was the *æther purus*, so that they might know exactly what ether they used. He then called for the next paper.

Mercurial Pill Mass.

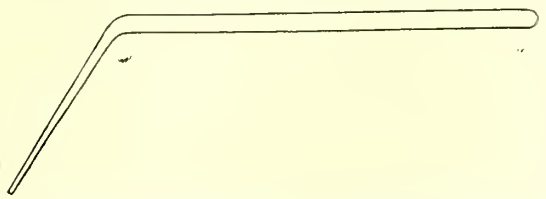
By Gilbert Simpson, Ph.C.

Fourteen samples of blue pill were examined by the author. Twelve of the samples were obtained from wholesale houses, directly or indirectly through retailers, and two were made by retail chemists. An assay for amounts of metallic mercury was carried out on each sample, which

was also examined qualitatively for the presence or absence of mercurous and mercuric oxides. The following method was adopted for the assay process :

A piece of combustion tube, about 30 centimetres in length, was sealed at one end, filled, and drawn out at the other as in the sketch.

The charge consisted of a column of (1) sodium bicarbonate 5 centimetres long; (2) asbestos fibre; (3) soda lime, 5 centimetres; (4) 10 grams of pill mass rolled into a pipe of about 8 centimetres; (5) soda lime, 5 centimetres; and (6) a plug of asbestos fibre. The distillation was conducted slowly, and the first furnace flame played at about 5 centimetres from the bend in the tube; this allowed the bulk of the mercury to collect in one globule near the bend, where a slight depression is left in the tube, and the resinoid matter to pass over into the receiver—a beaker of water. It was found that minute quantities of mercury were mechanically included in the tarry matter and ejected,



and in all cases to prevent loss a large watch-glass was placed over the beaker during the process. The tube having been heated by the usual method from the bend to the second portion of soda lime, the globule of mercury near the bend was now heated with an ordinary bunsen flame, and thus carried into the receiver; finally the sodium bicarbonate was heated, the last traces of mercury thus being driven out. The end of the tube in the receiver was now broken off, and the minute globules and resin removed from this with ether. Ether was now floated on the liquid in the receiver; this dissolved the resin and liberated included mercury. Successive decantations and washings with alcohol (90 per cent.) followed; the mercury was transferred to a crucible, washed with ether, dried by slight heat, and finally weighed.

In testing for mercurous oxide a portion of the mass was rubbed with warm acetic acid in a mortar, filtered, and the filtrate treated with diluted hydrochloric acid. For mercuric oxide a portion of the mass was rubbed in a mortar with warm diluted hydrochloric acid and purified animal charcoal, filtered, and the filtrate treated with hydrosulphuric acid and stannous chloride separately.

A sample of pil. hydrarg., B.P., prepared with every care, yielded on assay 33.34 per cent. of mercury. The examination of the commercial samples resulted as follows :

Pil. Hydrarg. made by Wholesalers.

Number of Sample	Percentage of Mercury	Mercurous Oxide	Mercuric Oxide	Consistency of Mass
1	30.93	Absent	Absent	Firm
2	31 0	,,	,,	Hard
3	31.38	Trace	,,	Firm
4	31.4	Absent	,,	,,
5	31 55	,,	,,	Hard
6	31.7	Trace	,,	Firm
7	31.76	Absent	,,	,,
8	31.9	,,	,,	Sticky
9	32.1	,,	,,	Very sticky
10	32 81	Trace	Trace	Soft
11	33.98	Absent	Absent	Firm
12	35.93	,,	,,	,,

Pil. Hydrarg. made by Retailers.

13	32.5	Absent	Absent	Firm
14	33.77	,,	,,	Sticky

Thus the percentage of mercury varied from 31 to 36 per cent., traces of mercurous oxide occurred in 25 per cent., and a trace of mercuric oxide in 8.3 per cent. of the wholesale samples.

DISCUSSION.

Mr. BENNETT pointed out that the method using hypophosphorous acid for determination of mercury is easier of application than the combustion method and is fairly well known—*i.e.* one gram of the sample is oxidised with nitric acid, excess driven off, and residue dissolved in water; the mercury is reduced to mercurous state and finally mercury, and, after washing with water, alcohol, and ether, dried and weighed.

Mr. ALCOCK asked how long the operation takes.

Mr. DAVID ANDERSON was somewhat surprised at the small amounts of mercuric oxide found in the samples examined, and since Attfield stated that the full therapeutic value of mercury pill was due to the oxide present, he wished to know the author's experience.

Mr. MITCHELL (Inverness) asked about excipients.

Mr. COWIE said no doubt the hypophosphorous-acid method is quicker, but he doubted if it was as reliable as Mr. Simpson's method. He considers the iodine-absorption method excellent (but did not describe the method). Confection of roses would be quite suitable as an excipient if always dried to a suitable consistency. He did not understand the remark of Mr. Simpson in regard to pulv. acaciæ in pil. phosphori, B.P.; he scarcely thought that it was meant to be added in any quantity.

Mr. SIMPSON, in reply, said he had tried the process, using hypophosphorous acid. It works well with hyd. c. cret. and mercuric salts, but with the pill, ointment (frequently described as messy things) the globule was not clean, and the method unless for accurate results. The time occupied in testing two samples by his process was three hours, including drawing of the tubes, and the process of heating regulates itself by turning on the burners in sequence. Confections of roses—if of suitable consistency—and liquorice-powder were both satisfactory as excipients, and no doubt q.s. of each would be used to make a mass of the weight required. In an emergency he suggested hyd. c. cret. could be used with confection of roses as a substitute for pil. hydrarg., and there could be no greater objection to the presence of chalk, which was not affected by the acids in the confection, than to the use of powdered liquorice. He did not know anything about the iodine-absorption method of Mr. Cowie. With regard to the use of acacia in pil. phosphori, his point was that acacia does not swell with beeswax or lard, but requires some aqueous vehicle, and the examiner did not think the candidate should be allowed to add a drop of water and let him subject the mass to the same condition as in the dispensary, where the mass is kept in water.

Mr. WHITE then read the following in commendable abstract :

Mercurial Ointment—

Assay and Examination of Commercial Samples.

By P. H. CREWE.

The method, now included in the United States Pharmacopœia, of determining the mercury in mercurial ointment by extraction of the fatty matter with ether or other suitable solvent, and, after treatment of the residual mercury with dilute hydrochloric acid to remove soluble impurities, drying and weighing it, although giving satisfactory results, is frequently difficult to work owing to non-coalescence of the particles of the finely divided metal into globular form. The process described in this paper depends on the removal of the fat after saponification by means of hot water. While results agree in both methods, the latter is simpler, and the mercury obtained in a more satisfactory condition.

PROCESS.—About 20 grams of the ointment are weighed into a beaker having a capacity of 300 c.c.; 10 grams of potassium hydroxide and about 100 c.c. of methylated spirit are added, and the whole is warmed on a water-bath until the mercury collects in globules. Hot water is next added, and the solution of soap is carefully decanted from the mercury, which is then washed several times with alcohol and then with a little ether, which is allowed to evaporate before weighing the mercury. If the globule is not quite bright it should be treated with a little warm dilute hydrochloric acid in order to remove any impurities.

In an experiment with 11.09 grams of mercury and some added lard, to determine loss due to solvent action of the alcoholic alkali on mercury, a loss of 8 milligrams, or

less than a tenth of 1 per cent., was shown. The following table shows results of determination of mercury in

Ointments Supplied by Wholesale Houses.

No. of Sample	Saponification Method. Percentage of Mercury	Ether Extraction. Percentage of Mercury	Excess (+) or Deficiency (−) from average p.c. of Mercury
1	—	44.3 and 44.4	− 8.4
2	48.1	48.1	− 0.8
3	47.4	47.6	− 2.0
4	53.5	54.0	+10 9
5	48.4	—	− 0.2
6	48.9	48.6	+ 0.5
7	49.3	—	+ 1.6
8	47.4	48.0	− 1.6
9	47.6	47.8	− 1 6
10	49.2	—	+ 1.4
11	47.6	—	− 1.8
12	48.1	—	− 0.8
13	47.9	—	− 1.2

The author was unable to assay a larger number of samples owing to his unavoidable absence from the laboratory. Sample No. 1 was soft, and at a temperature of 75° F. would be readily poured, and on examination was found to be made with a petroleum base, and the low percentage of mercury may possibly be explained, owing to its low melting-point, by the fact it was purchased during the hot weather in July. The remainder of the samples (except No. 4) may be said to answer pharmacopœial requirements.

Ointments Purchased from Retail Chemists.

No. of Sample	Ointment as ordered	Ointment as labelled	Percentage of Mercury	Excess (+) or Deficiency (−) from average p.c. of Mercury
14	Ung. Hydrarg. B.P.	Ung. Hydrarg. B.P.	47.7	− 1.6
15	,,	,,	45.7	− 5.8
16	,,	,,	46.6	− 3.9
17	,,	,,	50.1	+ 3.2
18	,,	,,	53.8	+10.9
19	,,	,,	48.4	− 0.2
20	,,	,,	47.6	− 1.8
21	,,	,,	47.5	− 2.0
22	,,	,,	46 3	− 4.6
23	,,	,,	47.1	− 2.8
24	,,	,,	47.8	− 1.4
25	,,	,,	48.4	− 0.2
26	Ung. Hydrarg. Fort.	Ung. Hydrarg. Fort.	48.1	− 0.8
27	,,	Ung. Hydrarg. B.P.	46.9	− 3.2
28	,,	,,	41.3	−14.8
29	Ung. Hydrarg.	Ung. Hydrarg.	46.3	− 4.6
30	,,	,,	16.0	−66.9
31	Mercurial ointment	Mercurial ointment	14.4	−70.2
32	,,	Mercurial ointment dilute	22.4	−53.8
33	,,	(No label)	14.9	−69.2
34	,,	,,	17.0	−64.9

Samples Nos. 14 to 28, specified in purchasing as the official ointment, with the exception of Nos. 18, 28, and possibly 15, may be said to contain a satisfactory percentage of mercury. As seen above in Nos. 29 and 30, one sample supplied as mercury ointment was the official preparation, and the other only one-third of that strength. The author points out, while not criticising the pharmacist's action in supplying the dilute article, that the authorities under the Sale of Food and Drugs Acts, as shown in prosecutions during recent years, only recognise the B.P. ointment, and that the chemist is required to say verbally as well as on the label when supplying the dilute preparation. Of the four preparations purchased as mercurial ointment, none were pharmacopœial strength, two were unlabelled, and a third did not specify the strength. In no instance was a statement made by the vendor of the kind supplied.

No. 33, in addition to being unlabelled, was made with a petroleum base. Sulphide of mercury formed a black scum on the mercury obtained from several ointments, and tin was also detected in one or two cases.

The author expressed his thanks to Mr. Basil Robinson for assistance in the work and to Messrs. J. Woolley, Sons & Co., Ltd., Manchester, in whose laboratories the assays were made.

There was no discussion on this, and Mr. Gilmour followed with a brief talk about the contents of the following, saying that he would not try to follow the example of his predecessors by giving an abstract which would exceed the full length of the original paper :

Phases of Pharmacy in Scotland.

By J. P. Gilmour.

This, the author said, was merely a preliminary sketch of the subject waiting treatment by a more capable hand.

Primitive Pharmacy.—The ancient Picts had, presumably, some crude knowledge of medicine and pharmacy, as representative modern races are on the same level of culture. Celtic elements were imported by Scots from Ireland, who settled on the north-west coast of Scotland, and Saxon beliefs and practices were introduced by the Teutonic stock which immigrated from England. Survivals of these exist in folklore, such as the doctrine of signatures, sympathetic magic, and astral and lunar superstitions.

Popular and Domestic Pharmacy has its roots in native savagery and barbarism. We trace the first modifying influences through the priests of the Church of St. Colomba, and by the Culdees, but monkish medicine had a narrow range in Scotland. In the transition to civilised conditions the evolution of the family recipe necessarily figures boldly. Manuscript collections of these existed for private circulation, and the more popular of them found their way into print, a typical example of the latter being the "Poor Man's Physician," published by John Moncrief, of Tippermalloch, which ran through several editions. It was an *omnium gatherum* of empiricism and nastiness, animal excrement being served up in a variety of "medicinal" forms, and the juice of stove-lice, called "Sclaters," was a favourite remedy. Half a century later Buchan's "Domestic Medicine" was published. It is an agreeable contrast to Moncrief's book, and had an extraordinary success, reaching thirteen or more editions. It was found in nearly every country household and was celebrated by Burns in that verse of Death's observations to the poet :

> "Ye ken Jock Hornbook o' the Clachan,
> De'il mak' his king's-hood in a spleuchan!
> He's grown sae weel acquaint wi' Buchan
> An' ither chaps,
> The weans haud out their fingers laughin'
> An' pouk my hips."

Buchan's medical doctrine was sane, and his pharmacy simple and sound. Of 185 simples recommended by him 151 are still in use. There is not much distinctive in recent Scottish popular and domestic medicine.

Officinal Pharmacy.—"John the Apothecary" at the Court of King Robert the Bruce, probably supplied the materials for embalming the body of the King in 1329. There is proof of the existence of an apothecaries' booth in Edinburgh between 1436 and 1460, and frequent references to Court and other apothecaries are found in public records. The early apothecaries carried on mixed business and practice. They were dealers in "spicerie" as well as sellers of drugs and doctors of medicine. Geo. Preston, professor of botany in Edinburgh University, kept a shop in the High Street of the capital. Aberdeen professors also had shops. The evidence as to status and social connections of apothecaries shows that they had a better social standing than present-day chemists and druggists. Many of them were lairds' sons and had aristocratic friends. The apothecary's shop of the eighteenth century was of great importance to medical students, serving as a sort of extra-mural school. Old Mrs. Balmanno's shop at the sign of "The Golden Galen's Head" in Glasgow, and Neil Maclean's laboratory in Aberdeen, are fair examples of this. The author then referred to old-time apothecaries' advertisements and price-lists—*e.g.*, Dr. Gordon's "Pharmaco Pinax" (1625). Dr. Lawson's mixed business at Stonehaven (1745) was three-fourths public-house and one-fourth pharmacy. Routine in old Scotch pharmacy, where everything was made on the premises from start to finish, was laborious but leisurely, and developed individuality and independence. Elegant dispensing had not arrived. When Mr. John Duncan went to Edinburgh (1811) ointments were still sent out in mussel-shells, and pills and powders in odd scraps of paper. The title "pharmation" was current in Scotland in the sixteenth century and became a licensed designation under the *régime*

of the Glasgow Faculty of Physicians and Surgeons; but the names "chemist" and "druggist" were unknown or uncommon until the end of the eighteenth century. The first Glasgow Directory, 1783, when the population was about 45,000, contains the names of seventeen physicians and surgeons in practice, many of whom had shops, and seven druggists, only one of whom was entered as "chymist."

Applied Pharmacy.—Even after the union of the English and Scots Parliaments in 1707 chemicals and exotic drugs continued to be imported from London. The first important Scottish pharmaceutical manufacture was the production of morphia in Edinburgh according to Professor William Gregory's calcium-chloride process (1831), which enabled Edinburgh to turn out salt of "unrivalled purity and cheapness." About the same time, or later, there was a considerable manufacture started in Edinburgh of alcoholic tinctures, concentrated infusions, etc., quality fostered by the spirit-duty in Scotland being 3*s*. 4*d*. per gal., as against 7*s*. South of the Border, which difference continued until 1860, when the duty was equalised at 10*s*. all over the United Kingdom. Chloroform manufacture in Edinburgh was also aided by this difference, as well as by the fact that its introduction as a general anæsthetic emanated from Edinburgh. Two standard pharmaceutical preparations were given by Scotland to the world: "Gregory's Mixture" and "Easton's Syrup," the former an Edinburgh and the latter a Glasgow product.

Official Pharmacy had its advent in Scotland under the Charter of James VI. (1599), founding what became the Glasgow Faculty of Physicians and Surgeons. Powers were conferred on that body to regulate the preparation and sale of drugs, to institute a poisons schedule, and examine persons practising surgery and pharmacy. A separate pharmacist's licence was instituted, and the faculty still claims its chartered right to issue this licence, although it has been waived since the passing of the Pharmacy Act, 1868. The original text of the licence is

> To sell drogues and mak up recipies according to one doctor's directions.

Abortive attempts were made by the Faculty to set up as a teaching body owing to unpreparedness of candidates, even at a time when the conditions of passing were elastic. Latin was obligatory, but candidates were sometimes excused, and one candidate was licensed "to take orders from doctor in Scots language because he has no other language." Mr. Gilmour quoted an instance of a candidate "referred" in pharmacy because his compositions were not *secundum artem*. Inspections of apothecaries' stocks by the Faculty were strictly carried out, and there were few complaints of adulteration, but occasionally there was about over-potency of preparations and insufficiency of stock. Edinburgh surgeons were incorporated with the barbers in 1505, but did not become a college until 1695, when similar powers to those of the Glasgow Faculty were granted to them. The Edinburgh College of Physicians was founded in 1681. Its most notable service to pharmacy was the publication of the Edinburgh Pharmacopœia; the first edition is dated 1699, and the last 1841. The earlier editions copied freely from the London Pharmacopœia, but the later editions were more independent and were superior in many respects. While adopting from the London prototype many mediæval monstrosities, soon the Edinburgh College discarded the worst of these and otherwise broke away from traditionalism. It was stronger on the dispensatory side, its "Canones Generates," given with each section of preparations, being particularly workmanlike. While the preface refers to desirableness of uniformity in composition of galenicals, etc., there is no definition, much less appreciation of standards of purity in drugs, and the identification of samples and estimation of their medicinal value was left to the arbitrament of the individual. For the sake of comparison the author has compiled a synoptical table of the principal contents of Ph.L. 1741 and Ph.E. 1742. The London Pharmacopœia of that year was compiled under the enlightened direction of Sir Hans Sloane. The table shows the total number of drugs and preparations in each Pharmacopœia, the number common to both, and the combined number of drugs or preparations surviving in the B.P. 1898. According to figures Ph.E. has 45.3 per cent. drugs and preparations in common with Ph.L. There was an intimate connection between the Edinburgh College of Surgeons and pharmacy. The "druggist apothecaries" of the end of the eighteenth century sprang from this source, and classes are still held in Surgeons' Hall, Edinburgh, which are suitable for the requirements of Minor students.

Sub-official Pharmacy.—Under this head the author gave a list of Scottish Hospital Pharmacopœias, viz.:

Pharmacopœia Pauperum in Usum Nosocomii. Regii Edinburgensis, 1752 and 1817, is the oldest.

Aberdeen Royal Infirmary, 1827 and 1888.

Dundee Royal Infirmary, 1893. Editor, W. Mail.

Edinburgh Infirmary. Editors: 1892, C. Arthur; 1896, T. Alexander; and a third edition is now in preparation.

Glasgow Royal Infirmary, 1835 and 1850.

Glasgow Royal Infirmary Ophthalmic Institute, 1888, arranged, with notes, by A. M. Ramsay, M.D.

Glasgow Western Infirmary.

The title of "apothecary" was until recently given to the chief dispenser in Scottish infirmaries, and this Mr. Gilmour considered reminiscent of the higher status of the dispenser's historic predecessor.

Professional Pharmacy.—The first professional body of pharmacists in Scotland was the "Association of Druggist-Apothecaries of Edinburgh," 1785. The Aberdeen Pharmaceutical Association, founded in 1839, is the oldest surviving body of chemists, and is distinguished for its fruitful labours on behalf of pharmaceutical education. Other associations have also done good work in this and other directions making for professional development. Reference was also made to the North British Branch's record of continuous and influential services in furtherance of the scientific and professional aspects of pharmacy, and the cordial relations which it has fostered between representative Scottish pharmacy and the medical profession have been productive of incalculable good.

Academic Pharmacy.—In this section the author stated that the Universities of St. Andrews, Glasgow, and Aberdeen were all created in the fifteenth century, and the Edinburgh University in 1682. Nominally provision for the teaching of medicine existed in St. Andrews and Aberdeen from the start, but there was no systematic application of it. Regular medical teaching dates from 1727 in Edinburgh, from 1750 in Glasgow, and later in Aberdeen and St. Andrews. The now famous Edinburgh School of Medicine had a lowly beginning in a physic-garden opened there in 1675. The first keeper gave lectures on medicinal plants in the garden to medical apprentices and others, and one of his successors became the first professor of botany in the University. The Chair of Materia Medica was founded in 1738. Charles Alston the first professor, was a man of reforming spirit and did much to simplify and systematise materia medica. The distinguished occupants of this chair included the following:

> A. Duncan, jun., M.D., editor in succession to his father of the once authoritative "Edinburgh New Dispensatory," which passed through many editions from 1803 onwards. Sir A. Grant, the historian of Edinburgh University, ascribes discovery of cinchonine to Duncan, but the present writer has been unable to find confirmation of this claim. As is well known, the discovery is generally credited to Pelletier and Caventou.
>
> Robert Christison, M.D., a master of pharmacy, whose monumental "Dispensatory" embodies a vast number of new facts in pharmacy and pharmacology. It is gratifying to recall that as Government visitor to Pharmaceutical Society's examinations in Edinburgh he was brought into personal contact with representative Scottish pharmacy.

The Glasgow University Chair of Materia Medica was founded in 1766. The professors have been worthy but not wonderful men; but a brilliant exception is Dr. Ralph Stockman, the present occupant of the chair. Allusion was made to the rise of Anderson's College Medical School early in the nineteenth century, when Dr. Alex. Morton, lecturer on materia medica there in the fifties, had as his demonstrator the late Alex. Kinninmont. It has been suggested that the cheap medical education furnished by the college enabled many young men of meagre or moderate means to qualify, and so perpetuated and extended the doctor's-shop system in Glasgow and the West of Scotland. References were also made to St. Andrews University College, Dundee, and Aberdeen.

Discussion.

The President said he thought they would be disposed to agree with him that this was the most interesting paper

in the whole series. (Applause.) He was exceedingly sorry that it had been found necessary to ask Mr. Gilmour to furnish them with an abstract of a paper belonging to a class which was of all the papers the most difficult to give an extract of. He should like to compliment Mr. Gilmour on the admirable manner in which he had performed his task that morning. (Applause.)

The President said he would take the papers on nux vomica as read. These were :

Strychnine Standard for Galenical Preparations of Nux Vomica.

By Dr. W. E. Dixon and Robert Wright.

Messrs. Farr and Wright suggested at the Birmingham Conference in 1896, in a note on "Standardised Powdered Extract of Nux Vomica," that although brucine was far less toxic than strychnine, it was present in nux vomica preparations to such an extent that if possible its presence ought to be taken into account and calculated for. Authorities were quoted that the physiological action of the alkaloids (strychnine and brucine) were similar, and it was proposed to get the statement put to the test by a recognised authority on pharmacology, and, subject to the text-book statement being confirmed by physiological experiment, the suggestion was made that the brucine in nux vomica preparations should be determined and calculated into terms of strychnine, using the proper factor, and the strychnine standard suitably modified.

A quantity of pure brucine prepared from the commercial article by fractional crystallisation from dilute alcohol was forwarded to Dr. Dixon to settle the question of relative toxicity of the two alkaloids. The results of the experiments, as recorded here, seem to indicate that the difference in physiological action of the two drugs is so marked as to make it inadvisable to express the clinical value of one alkaloid in terms of the other, and it follows that a strychnine standard for nux vomica preparations is preferable to one of total alkaloids.

Brucine. Note on the Action of.

By Drs. W. E. Dixon and H. W. Harvey.

Brucine is regarded as having an action identical in character with that of strychnine, with a toxicity variously stated at anything from ten to forty times less. It was found as a result of the experiments with the brucine, prepared as above, that its action more closely resembled that of methyl-strychnium than strychnine.

Strychnine essentially affects the sensory cells of the spinal cord, in large doses increasing reflexes to such an extent that convulsions readily follow on the smallest afferent impulse. Death occurs during a convulsion from asphyxia caused by fixation of the respiratory muscles at a time when the necessity for oxygen is very great.

Brucine causes death in an entirely different way. Injections of brucine into mammals causes first spasmodia, twitchings of the muscles like strychnine, but these are never very violent or severe, and quickly pass off. The animal passes off into a narcotic condition and dies from paralysis, all the motor nerves being found to be paralysed after death.

Brucine causes death in the same way as curare and methyl-strychnium, by paralysis of the motor-nerve endings.

Without entering into pharmacological details, some idea of the type of action of brucine may be obtained by comparing with certain other drugs. A well-defined group of drugs exists which exert certain actions in common : they all (1) cause convulsions, (2) paralyse certain cells in body, and (3) paralyse motor-endings. In some one kind of action is more pronounced than another ; thus it is difficult to show that curare causes convulsions, since it paralyses the motor-endings so rapidly ; but this effect can be shown if injected into, or applied to, the spinal cord. Similarly with strychnine it is difficult to show that it paralyses the nerve-endings ; but if sufficiently large doses be injected into an animal which is kept alive by artificial respiration the motor-nerves cease to respond to electrical stimulation.

The following table shows the relationship of the action of brucine to certain other drugs according to the degree of the three main actions on animals :

Convulsions	Paralysis of Nerve Cells (Vagus, Sympathetic, Spinal Cord, etc.)	Paralysis of Motor Nerve Endings
Strychnine (marked) Brucine, methyl-strychnium, nicotine, conine, and apocodeine (slight) African boxwood and curare (difficult to observe)	Nicotine, brucine, apocodeine, African boxwood (marked) Conine, methyl-strychnium, curare (slight) Strychnine (difficult to observe)	Curare, African boxwood, brucine, methyl-strychnium (marked) Apocodeine and conine (slight) Nicotine and strychnine (difficult to observe)

All the remaining papers were, in the absence of their authors, read in abstract by Mr. White. The first was "The Characters of Official Iron Arsenate and the Preparation of a Soluble Ferric Arsenate," by Dr. F. B. Power and Harold Rogerson, which will be dealt with in another issue.

Discussion.

Mr. W. Duncan said that eight years ago he had recommended that ferric arsenate should take the place of the present ferrous arsenate, and he did not think that any suggestion to introduce a mixture of sodium ferri-arsenate and sodium ferri-citrate was an improvement—pharmaceutically or medically.

Mr. Finnemore remarked that the test attributed to Rosenthaler was really originated by Mr. Naylor in the seventies.

In reply to the President Mr. Duncan stated that the salt he recommended has the composition $FeAsO_4H_2O$.

After a few remarks from Mr. Cowie the next paper was taken, the President stating that he had received that morning, by way of Buxton, a letter from Mr. Umney in which he said he and Mrs. Umney were sorry not to be able to attend. The title of this paper (to be given in a future issue) was "Standards for Alkaloidal Drugs and their Fluid Extracts," by J. C. Umney and C. T. Bennett.

Tasteless Liquid Extract of Cascara Sagrada.

By Ernest Quant, F.C.S.

Exactly twenty years ago Mr. Robert Wright submitted, at a meeting of the Conference, a formula for tasteless fluid extract of cascara, which, with little modification, has been in use until the present time. But tasteless extracts, however desirable, have not superseded the official extract, owing to diminished activity and gradual deterioration to the extent of becoming useless as a laxative. The recorded experience of many pharmacists of preparations made with other alkalies, notably potassium hydroxide, is that a satisfactory article, free from taste, is not obtained by the methods adopted, and it seems necessary to fall back upon magnesia to provide a palatable preparation. Following the line of thought occurring to the author many months ago, that, primarily, the excess of magnesia used and also the drying of the moistened bark in the presence of alkali may be the cause of the unsatisfactory products, since dealing with various batches made according to Mr. Wright's Conference formula, he has arrived at the conclusion that the alkali is considerably in excess, and that by employing magnesium hydroxide in place of calcined magnesia, about one-fourth of the usual amount is sufficient. So that, instead of 2½ oz. of calcined magnesia in the original formula referred to, for 20 oz. of cascara sagrada, the equivalent in the form of magnesium hydroxide, ⅝ oz., answers the purpose. The author stated that the subsequent drying of the moistened material can be dispensed with, and a menstruum of dilute alcohol is not necessary, water-percolation extracting the material as perfectly as in the pharmacopœial extracts. The following is the formula used which gave satisfactory results :

Cascara sagrada in No. 20 powder	20 oz.
"Solution" of magnesium hydroxide (24 grains per oz.) ...	16 fl. oz.
Glycerin	4 fl. oz.
Alcohol	4 fl. oz.
Distilled water	a sufficient quantity

Moisten the cascara sagrada with the solution of magnesium hydroxide and glycerin. Set the mixture aside for three days, then pack in a percolator, and exhaust with water.

Evaporate the percolate to 16 fl. oz., and when cold add the alcohol, and, if necessary, water to make the volume measure 20 fl. oz.

The resulting product is faintly acid, and the bitter taste is just sufficiently eliminated. The activity does not diminish by keeping for several months, and no disadvantage need be feared on this score, since the process is simple enough for the retail pharmacist to make it according to his requirements and supply with a personal guarantee. The sagrada-bark was exhausted, as the B.P. directs, in another experiment, and to the liquid extract, while hot, the same proportion as above of "solution" of magnesium hydroxide was added, and evaporation continued until the requisite volume was attained. It was allowed to stand three days as in the other method, but the bitterness was in no way eliminated; and upon continuing the heating for several hours in a water-bath, the bitterness persisted, a miscible preparation being obtained. The failure to "debitterise" by adding alkalies to the extracted fluid was so complete that the author considers it a hopeless procedure.

DISCUSSION.

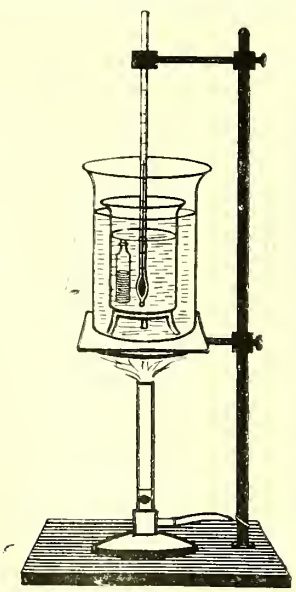
Mr. T. STEPHENSON said he had several years ago to work up a lot of liquid cascaras from various makers, and in trying to debitterise them with magnesia he found that one only yielded a tasteless and efficient extract. This led him to suggest that the quality of the cascara sagrada, and probably the manner of making the liquid extract, had something to do with the success of the processes.

"That," said Mr. E. WHITE, "is the crux of the whole matter."

Note on Valenta's Test.

By E. W. POLLARD, B.Sc.

This test is the temperature at which a warm mixture of acetic acid and oil becomes turbid on cooling, and is dependent upon several important factors. It is generally referred to as "the solubility of acetic acid in oil," but in reality the acid is more soluble in the oil than *vice versâ*,



and the author prefers Pearmain's term "intermiscibility." The strength of the acid must be known, and the melting-point determination is most reliable if the acid is pure. An experiment showed that the acetic-acid vapour in the flask was equal to 2.5 per cent. on mixing 1 gram of glacial acetic acid with water in a 300 c.c. conical flask, so that titration is useless except under great precautions. For the experiments glacial acetic acid melting at 15.6° C. was used. It was obtained by freezing B.P. acid and pouring off the supernatant liquid when about a third of the substance was frozen. A further attempt was made to standardise by obtaining a paraffin that would give a Valenta of ordinary temperature. The first 100 c.c., coming over between 120-160° C., of the distillate from a litre of household paraffin obtained by boiling slowly, using a dephlegmating column, was again distilled in 10 c.c., the first droppings being rejected. For the tests equal weights of both acid and oil were used, the advantages of this method being (1) accuracy in quantities, (2) the Valenta figure for most oils then falls below 100° C., and (3) more accurate readings owing to slower cooling at lower temperature. The method used was described as follows:

> One gram of pure acetic acid, m.p. 15.6° C., is weighed from a small curved pipette into a thin glass bottle of about 4 c.c. capacity, without allowing the acid to touch the neck or sides. Any excess is absorbed by a tiny strip of filter paper. One gram of oil is similarly weighed on top, and excess absorbed as before. The bottle is stoppered or well corked, and violently shaken in and out of a bunsen till the contents are just clear. It is then pitched bodily into a double bath of two beakers containing water heated to about 10° C. above the expected Valenta figure. An accurate thermometer passes to the bottom of the smaller beaker. The cooling is watched, and at the first sign of the oil and acid becoming turbid the reading is taken. (This reading the author calls the "Weight-Valenta" figure.)

Five fractions of the paraffins, obtained as above, were submitted to this method and gave the following results, showing an irregular increase due to non-uniformity of paraffins in the successive fractions:

	Boiling-points of Paraffins	Weight-Valenta Figure
1	125°–130° C.	9°
2	130°–135° C.	12°
3	135°–140° C.	15.6°
4	140°–145° C.	17.2°
5	145°–150° C.	20.6°

Fraction (3) giving 15.6° C. with the standard acid gave a Valenta figure of 25.0° C. with the acid of the mother liquid melting at 12.8° C., thus showing the necessity of having a standard acid and absence of moisture from the oils tested. The acid number should also be determined as it lowers the Valenta figure, which, in fact, is an indication of the natural acidity.

The Weight-Valenta figures obtained for some of the fixed oils were then given. With all these oils, except cod-liver oil, after separation the lower acid layer was colourless and smaller in bulk than the upper oily one. With cod-liver oil the lower layer was yellow and of considerably larger bulk.

The effect of camphor (or other substances soluble in acetic acid) is shown by the Valenta figures of 23.5° C. for olive oil (Valenta figure 66° C.) containing 21.5 per cent. of camphor, and 31° C. for an oil (Valenta figure 78° C.) with 22 per cent. of camphor, or a reduction of 2° C. in the Valenta figure indicates an increase of approximately 1 per cent. of camphor. Liverseege ("Year-books" 1901 and 1905) apparently used a weaker acid with erratic results. Oleic acid also gives, up to 10 per cent. of acidity, a reduction of about 2° C. for each per cent. of acid as oleic acid present and the formula—

Corrected Weight-Valenta = Wt.-Valenta + (2 × percentage of acid) would give a more correct figure for oils. The chemistry of the test is somewhat obscure, but oils containing glycerides of the lower fatty acids give a low Valenta figure, and it is probable, as Hehner has pointed out, that the glycerides of the acids higher in the series separate out first.

Litharge and Lead Oleate: Notes on.

By E. F. HARRISON, B.Sc., F.I.C., AND H. E. WATT, D.Sc., F.I.C.

Commercial lead plaster and litharge are on the Conference research-list as materials requiring investigation; and as one of the authors had recently to examine samples of these substances, it was deemed worthy to include a few others as ordinarily supplied for pharmaceutical use, and to place the results on record.

LITHARGE.—The B.P. requirements are simple—viz., that it shall dissolve completely in dilute nitric acid and in acetic acid, and shall give no characteristic reaction with the tests for copper, iron, or carbonates. Seven samples were submitted to these and other tests with the following results:

Solubility in Dilute Nitric Acid.—The litharge was boiled

with the acid. Two samples left inappreciable traces of residue, four contained appreciable but unweighable traces of insoluble residue (apparently lead sulphate), and the remaining sample contained about 1 per cent. of undissolved lead peroxide.

Solubility in Acetic Acid.—The litharge was boiled with the acid. Two samples contained inappreciable, and three unweighable, traces of residue as above. The two remaining left 1.78 and 2.04 per cent. of residue (metallic lead) respectively.

Iron.—All the samples contained traces only of iron, easily detected by adding sulphocyanide to the solution in nitric acid.

Copper.—None of the samples showed any trace.

Carbonate.—All samples mixed with water gave a distinct effervescence on acidifying, but the amount was not large in any case.

Arsenic.—No appreciable quantity was found, but minute traces were not tested for.

The Loss on Ignition includes both water and carbon dioxide, and varied from 1.43 to 2.52 per cent.

Tabulated Results.

Number of Sample	Insoluble in Dilute HNO_3	Insoluble in Acetic Acid	Fe	Cu	As	Percentage Loss on Ignition
1	trace	trace	Trace	Fair trace	None	1.55
2	trace	fair trace				2.52
3	1 p.c. (PbO_2)	fair trace				1.80
4	fair trace	1.78 p.c. (Pb.)				2.20
5	fair trace	2.04 p.c. (Pb.)				1.70
6	practically none	practically none				1.43
7	practically none	practically none				2.06

Although no sample conformed with perfect strictness to the B.P. requirements, Nos. 6 and 7 contained no impurity that could reasonably be objected to, and the same may be said of Nos. 1 and 2, which were just less pure. Nos. 3, 4, and 5 cannot be regarded as satisfactory.

Lead Plaster.—Seven samples obtained from wholesale houses were examined, and, in addition, specimens for comparison prepared from olive, cottonseed, and nut oils. The official ingredients for making the plaster provide excess of lead oxide. Regarding (without error of any importance) olive oil as glyceryl oleate the equation

$$3PbO+3H_2O+2C_3H_5(C_{18}H_{33}O_2)_3 = 3Pb(C_{18}H_{33}O_2)_2+2C_3H_5(OH)_3$$

shows 6,687 parts of litharge and 17,680 parts of olive oil are equivalent, or 2 lb. of olive oil requires 0.756 lb. of litharge; the excess of 0.244 lb. in the B.P. quantities remaining as oxide or forming an oxy-oleate. A plaster prepared in this way, and completely free from water, would contain 6.8 per cent. of glycerin and total lead equivalent to 32.7 per cent. of lead oxide (PbO). The samples were tested as follows:

Moisture.—Determined by heating in air oven at 100° to 103° C. until the weight was constant.

Lead.—The plaster was heated below combustion-point until no more was being lost, moistened with nitric and sulphuric acid, and ignited until white lead sulphate remained, which was weighed and calculated to oxide.

Fatty Acids.—Thirty grams of plaster and 60 c.c. of 10-per-cent sulphuric acid were boiled under a reflux condenser for half an hour. The aqueous layer was run off on cooling, and the oily layer was washed repeatedly with water, until the washings were neutral; it was then filtered through a dry filter-paper, keeping it warm during filtration. The melting and solidifying points of the fatty acids (which contain any unaltered oil present in the plaster) were determined on quantities of a few grams. The iodine-numbers were determined by means of Hanus' solution (iodine monobromide), and the acid-values by dissolving a known weight of the fatty acids in neutral alcohol and titration with decinormal solution of potassium hydrate, using phenolphthalein as indicator.

Cottonseed Oil.—The fatty acids were tested in each case by Tortelli and Ruggeri's modification of the silver-nitrate test, and results in all cases were negative; but a negative result was also obtained in the case of plaster made from cottonseed oil, the explanation probably being that the reducing substance is removed in washing the fatty acids, as stated by Muntz, Durand, and Millian.

Tabulated Results.

Number of Sample	Moisture, Percentage	PbO Percentage	PbO Percentage on Dry Plaster	Fatty Acids			
				Melting-point	Solidifying-point	Acid value	Iodine-number
				C.	C.		
1	9.00	30.43	33.44	25°–26°	21.5°	200.6	79.7
2	2.77	29.27	30.10	28°–29°	24°	200.2	80.6
3	3.93	31.14	32.41	28°–29°	25.5°	203	80.3
4	14.48	27.54	32.20	26°–27°	22.5°	201	81.4
5	11.7	28.07	31.83	25°–26°	21.5°	201	81.3
6	19.0	26.71	32.97	27°–28°	22°	202	80.0
7	6.37	30.03	32.07	34°–35°	28.25°	206	85.7

The samples varied in hardness and brittleness, apparently according to age, as the preparation containing 19 per cent. of moisture was brittle and that with 3.9 per cent. was too soft and sticky to break. The principal variations are seen in the moisture and the lead-content calculated on the dry material. The characters of the fatty acids from No. 7 point to its having been made from some oil other than olive oil.

Podophyllum Resin: Its Solubility in Alcohol.

By Samuel Taylor.

The author had occasion a few years ago to examine various commercial samples of podophyllum resin; the results of the same he published at the time. It was then suggested that, since none of the samples were entirely soluble in 90-per-cent. alcohol, probably the age of the samples may affect their solubility. The statement by Lohman that resin is not present in fresh podophyllum-rhizome was the origin of the suggestion, since if it is formed after collection of the rhizome it is not unreasonable to suppose that it is liable to further change; and the author considers, therefore, that some limit should be set to the age of the drug after which it should not be used.

Experiments: using 90-per-cent. Alcohol as Solvent.

1. Podophyllum Resin, fresh prepared and entirely soluble. After twelve months the insoluble portion amounted to 0.4 to 0.7 per cent.

2. Podophyllum Resin from stock, containing 0.4 per cent. of insoluble matter. After twelve months it has increased to 1 per cent. and 2.6 per cent.

3. Podophyllum Resin as No. 2 after two years contained 3.6 per cent. of insoluble matter.

4. Podophyllum Resin, freshly prepared and completely soluble, contained after two years 2.4 per cent. of insoluble substances.

The author has previously shown that some samples contain as much as 10 per cent. of matter insoluble in 90-per-cent. alcohol, and that the solubility in ether and chloroform corresponded to that in alcohol, and he considers it right to state that the insolubility of podophyllum resin in 90-per-cent. alcohol should not exceed 2 per cent., and not, as in the B.P., soluble or nearly soluble.

By this time more than 100 ladies and gentlemen were in the hall,

The Concluding Proceedings

having attracted them. We report as fully as space permits what was done under this heading. The leaders on the platform included Mr. John Smith (Dublin), Mr. R. A. Robinson, Sir Edward Evans, Mr. Naylor, Mr. Martin, Mr. Tocher, and Mr. Howard.

Presentation of Books from the Bell and Hills' Fund.

The President said it now devolved upon him to present the books from this fund, which were given to the chemists in the different towns and cities which the Conference visited annually. He had the greatest pleasure in handing these books to Mr. Giles on behalf of the chemists of Aberdeen and district. The volumes selected were from the Bell and Hills' fund: "National Dispensatory," four volumes of Watt's "Chemistry," and Greenish's "Microscopic Examination of Foods and Drugs."

Mr. Giles (Aberdeen) said he had great pleasure in receiving this gift. Twenty-three years ago, when the Conference last visited Aberdeen, a similar gift was made,

and some of the volumes then given were found to be valuable even at the present day. With those added to-day they in Aberdeen ought to have a very good selection of handy books of reference, which would be very valuable to them. (Applause.)

Votes of Thanks.

Alderman Robinson (London) moved that the warmest thanks of the Conference be given to the local committee, and that the Ladies' Committee be included in the compliment. (Applause.) The members of the Conference had very much appreciated what had been done for them in this respect. The present meetings had been successful not only from a scientific point of view, but from a social standpoint. They would all carry away the most pleasurable recollections of Aberdeen, and perhaps, as had been the case elsewhere, some of them might also bear away tender memories that might have a more permanent character. (Laughter and applause.) He must also mention his friends, his host and hostess, Mr. and Mrs. Giles—(applause)—Provost Alexander of Banff, the Chairman of the Committee, and Mr. Hay, Hon. Secretary. (Applause.)

Mr. James Russell (Dundee) heartily seconded the motion. The meeting had been one of the most successful the Conference had ever held; and the efforts of the local Committee, assisted by the Ladies' Committee, had been eminently satisfactory. (Applause.)

The motion was carried with acclamation.

Mr. Giles, in acknowledging the vote of thanks, said he was glad Mr. Robinson had included the Ladies' Committee in this compliment, but in these days when they had so many suffragettes among them—(laughter)—he believed the ladies would reply for themselves. (Laughter and applause). The Ladies' Committee had been very helpful in making the arrangements. Personally, he had found the work very pleasant, and should be very willing to go through it again. (Applause.) Then Mr. Hay, as Local Secretary, had most carefully attended to his duties, in which he had been ably assisted by Mr. James Paterson. (Applause.) Mr. Giles also spoke very cordially of the services rendered by the Chairmen of Sub-Committees, Mr. Anderson and Mr. Reid.

Mr. Hay (Hon. Secretary) said he had only done what he intended to do from the first. He had tried to cultivate what he considered to be the principal work of a secretary—the art of being in two places at one time. (Laughter and applause.) He heartily thanked them, and if his efforts had been appreciated he had an ample reward. (Applause.)

Mr. J. R. Hill (Edinburgh) proposed that the thanks of the Conference be accorded to the Senators of the University and the Students' Union for granting the use of Marischal College Buildings, which the visiting members had much appreciated. Aberdeen was famed for three things—granite, hard-headedness, and its splendid appreciation of Higher Education. (Applause.) No man could come to the town without realising how Elementary and Secondary Education and University Education were completely organised, and it might be remarked in passing that a member of this Conference, their friend Bailie Paterson, had had a very considerable and honourable hand in bringing about this position of things—(applause)—and this meeting was the crown and cope-stone to the distinction of Aberdeen. He did not think there was any city in the kingdom where the Conference could have been more elegantly, nay, magnificently, honoured than it had been in Aberdeen. (Applause.)

Mr. D. B. Dott (Edinburgh) seconded, and the vote was carried amid loud applause.

Mr. John Smith (President of the Pharmaceutical Society of Ireland) proposed that the hearty thanks of the Conference be given to the Lord Provost, Magistrates, and Town Council of Aberdeen for their splendid entertainment on the arrival of the members on Monday evening. (Applause.) Some of them, he said, who came to Aberdeen for the first time had perhaps heard that the people were like the granite of their city—looked upon as sometimes cold and hard-headed; but, after the splendid reception the members got on Monday evening, he thought they would have reason to change their opinions straight away. (Applause.) He thanked the President for allowing him to propose this resolution. (Applause.)

Mr. J. P. Gilmour, Glasgow, seconded the motion. He had not, he said, very much experience of municipal hospitality; but what struck him about the reception at the Art Gallery on Monday was the free and friendly spirit that characterised the demeanour of the magistrates and others towards their guests. (Applause.) The environment was inspiring, the collection of pictures being so delightful, that the evening must always be memorable to those who had the pleasure of being there. (Applause.)

The President added his testimony to that of the other two speakers, saying that never, during the whole course of his life, had he enjoyed a public function so much as the reception on Monday night. And what was more particularly gratifying had been the hearty manner in which the reception had been followed up, for they had Mr. Bailie Milne with them, and also Lady Lyon at the entertainment in the Mitchell Hall on Tuesday evening; and on all hands he had heard expressions of the deep pleasure it had given the people in the city to entertain the members of the Conference. The members knew that the Conference was worthy of the best entertainment which it could get anywhere (applause), for he made bold to say that no calling was more deserving of honour than one like theirs, the object of which were of a beneficent character. (Applause.)

The motion was adopted with great cordiality.

Next Place of Meeting.

Mr. Clague, Newcastle, who was accompanied by Messrs. G. Foggan, L. Williamson, H. W. Noble, and G. F. Merson as a deputation from the Newcastle and District Association, appeared in support of a request that the Conference should hold its annual meeting in 1909 in Newcastle. Mr. Clague read letters from Mr. Weddell and Mr. Harrison, Sunderland, expressing regret at being unable to be present, but emphasising the claims of Newcastle to a visit from the Conference. Mr. Clague said they had been fortunate enough to secure for the accommodation of the Conference the Armstrong College of Science. (Applause.) With regard to the ladies, there never had been any objection to Scottish ladies going over the border, and he was sure there would be no possible objection on this occasion, for it was understood that next year they were all going to bring their "ain Tocher." (Loud laughter.) Mr. Clague in concluding a speech, of which this is a mere skimming, referred to several Newcastle men who had won distinction in the world of pharmacy.

Mr. Foggan and Mr. Martin having supported the application,

It was resolved, on the motion of Mr. Naylor (London), seconded by Mr. Bransom (Leeds), that the Conference visit Newcastle next year, the President remarking that in going to Newcastle the Conference was but returning home, for Newcastle was the original home of the British Pharmaceutical Conference.

Office-bearers.

Sir E. Evans (Liverpool) moved the election of office-bearers.

President.

Mr. J. F. Tocher, Peterhead.

Vice-Presidents.

J. R. Young, Warrington. | Geo. Weddell, Newcastle.
G. Lunan, Edinburgh. | F. Ransom, Hitchin.
J. Smith, Dublin. | H. G. Greenish, London.

Honorary Treasurer.

J. C. Umney, London.

Honorary General Secretaries.

E. Saville Peck, Cambridge.
Edmund White, London.

Honorary Local Secretary.

T. M. Clague, Newcastle.

Assistant Local Secretary.

H. W. Noble, Newcastle.

Executive Committee.

F. H. Alcock, Birmingham. | D. Lloyd Howard, London.
H. Finnemore, London. | W. H. Martindale, London.
J. P. Gilmour, Glasgow. | Alderman J. Harrison, Sunderland.
E. F. Harrison, London. | W. F. Hay, Aberdeen.
J. S. Hills, London. |

Referring to the gentleman proposed as President, Sir E. Evans said that from what he had the privilege of

knowing of Mr. Tocher, the proceedings of next year would be of the very highest character, and that their interest in this Conference would be well served by him as President. He could congratulate Mr. Tocher first on the committee over which he would preside and the quality of it; still more did he congratulate the committee on the excellent President that would preside over them. (Applause.)

Mr. Peter MacEwan, Editor of The Chemist and Druggist, in seconding the election of office-bearers, said it was here in 1885 that the Conference had for the first time a Scotsman for its President, Mr. Stephenson, a typical Scot in many respects, a pharmacist devoted to his craft, and a man of classical attainments; when he spoke, Mr. Stephenson always came straight to the point. He (Mr. MacEwan) was one day in his shop when a lady entered and said: "Mr. Stephenson, what do you know about Mother Seigel's Syrup?" "It's 2*s.* 9*d.* a bottle, ma'm," was the reply. (Laughter.) Now it was very curious that for the second selection of a Scot as President the Conference came to Aberdeen, and they had a typical Scot in Mr. Tocher, who was a most accomplished pharmacist of high intellectual attainments. Mr. Clague would be Hon. Secretary for next year, and he could personally testify to the excellent way in which he had, on the occasion of the previous visit to Newcastle, discharged the duties. (Applause.)

The motion was unanimously and heartily adopted.

Mr. Tocher, the newly elected President, in returning thanks for the great honour done him, said he was conscious that his residence at so great a distance from London would prevent him being quite so active a President as his predecessor, or quite so regular in attending at meetings. But he wished to say that all his efforts would go towards maintaining the dignity of the office and the efficiency of the British Pharmaceutical Conference as the institution in the British Empire which was strongly devoted to the advancement of pharmacy and the allied sciences. After a graceful tribute to the distinction of Mr. Wright, Mr. Tocher cordially thanked the Conference and said he would do his best. (Applause.)

On the motion of Mr. Martin, seconded by Mr. Glyn-Jones, Mr. Wright was heartily thanked for the able manner in which he had filled the office.

Mr. Wright briefly replied, and the proceedings closed.

Personalities.

Mr. H. C. Laws, for many years with Messrs. S. Maw, Son, & Sons, has been appointed representative for Messrs. Sangers, 258 Euston Road, London, N.W.

Mr. Richard Winfrey, M.P., pharmaceutical chemist, addressed 2,000 agricultural labourers at Holbeach Bank, Lincolnshire, on Sunday, September 13. He urged that wages should be fixed according to the price of produce and not, as at present, according to the abundance of labour.

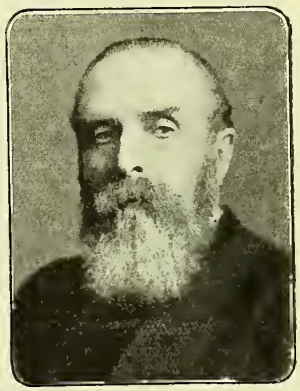
The Rev. H. Bury, M.A., South Hampstead, who has just been elected Bishop of Honduras and Central America, is a native of Oswaldtwistle, near Blackburn. In his youth he was apprenticed to Mr. Astin, who at that time kept a chemist's shop in Accrington. Subsequently Mr. Bury studied for the ministry.

Mr. A. E. Pratt, 102 Avenue des Ternes, Paris, who was manager of the Pharmacie Rolland, 118 Avenue Victor Hugo, Paris, and whose pharmaceutical museum was described in the *C. & D.*, July 30, 1904 (p. 166), is now travelling in France on behalf of Messrs. Fairchild Bros. & Foster, New York and London.

A Portrait and biography of Mr. Herbert Knott, chemist and druggist and sub-postmaster, Blackburn Road, Bolton, is given in the last issue of the "Sub-Postmaster." Mr. Knott is in partnership with his brother, Mr. Percy Knott, who is also a chemist and druggist. He is Secretary of the Sub-Postmasters' Mutual Guarantee Co., Ltd.

Mr. F. G. Foster, chemist and druggist, Portsmouth, last week opened the Portsmouth Municipal College, which has been erected and equipped at a cost of 110,000*l.* A good picture of the ceremony, with the Mayor as the central object, was given in the "Daily Mirror" of September 12. The prospectus of classes includes a pharmaceutical course, the subjects chemistry, physics, botany, and materia medica being in charge of F. Beddow, D.Sc., Ph.D., and Elsie S. Hooper, B.Sc., A.I.C., pharmaceutical chemist.

The Very Rev. John Marshall Lang, D.D., LL.D., who was one of those who welcomed the British Pharmaceutical Conference to Aberdeen, has been Vice-Chancellor and Principal of Aberdeen University since 1900. He was born in 1834 and educated at the High School and University, Glasgow. Entering the ministry, he has held several distinguished positions in the Church, and acted as a Church delegate to the United States (in 1872), and to Australia (in 1887). He was President of the Reformed Churches (Presbyterian) in 1896, and Baird Lecturer in 1900. His publications, which are numerous, are theological.



Mr. James Fowler Tocher, pharmaceutical chemist, Peterhead, who has been elected President of the British Pharmaceutical Conference, was apprenticed in 1880 to Messrs. W. Troup & Sons, Rhynie, Aberdeenshire, afterwards serving as an assistant in Glasgow and Aberdeen. He studied at Marischal College, Aberdeen, during 1885 and 1886, passing the Minor and commencing business at Peterhead in the latter year. Next he studied at Mason College, Birmingham, and passed the A.I.C. examination in 1889 and the Major the next year. His first published pharmaceutical paper was on the detection of sesame oil in olive oil, the method then devised being the one now generally followed. He also isolated in the course of his experimental work a new substance, which he named sesamin, $C_{18}H_{18}O_6$. Since then he has written on red-lead, phenol, paraffins and terpenes, nitrogen determination, water-analysis, citrates and tartrates, and pepsin. Mr. Tocher is an original member of the Buchan Field Club, a local scientific society which on October 10 celebrates its majority. He has for eighteen years been its secretary and edited its "Transactions." He has also written on archæological subjects, stone-cists and urns, and on anthropological subjects, such as the Eskimo and the Scot, particularly the Aberdonian. He has surveyed the inmates of asylums in Scotland, and has written an account of this in the form of a memoir under the direction of a committee. He carried out the survey of the colour characters of the school-children of Scotland. The results of this survey are to be given in a memoir on "Biometrika," which is being published this month.





Conference Confidences.

Some came to Aberdeen by rail, and a few by steamer; half a score from London were in the latter category, and as far as this scribe has ascertained they had a rough time on the day prior to their arrival in Aberdeen on Monday morning. The two following paragraphs suffice to indicate how those who came a day before the fair spent the time.

* * *

Sunday morning: Went round by Girdlestone Lighthouse. A grand walk. Slight shower of rain. In the afternoon Mr. Kay (of Davidson & Kay) conducted a party of ten ladies and gentlemen about a ten-mile drive round the outskirts of the granite city. Part of the drive being through the beautiful public park, where between 5,000 and 6,000 people were assembled, being greatly enjoyed. Afterwards several ladies and gentlemen, at the invitation of the local President, Mr. Giles, had tea with Mr. Robinson, Chairman of the London County Council. A most enjoyable day was spent by those visitors who came up from the South on Saturday [for "South" read "Manchester and the Midlands"]. Monday morning: Various parties set out in different directions. Two of the Manchester gentlemen played golf. Some young Southerners went bathing, and a party conducted by Mr. Anderson (one of the local committee) were, through the courtesy of Dr. Williamson, taken through the Aberdeen Fish Hatcheries, a most interesting hour or so being spent in every department, many unique and rare specimens being seen.

* * *

The sharp shower on Tuesday by no means damped the enthusiasm, when the whole party, numbering over 300, were shown the processes of one of the most characteristic of Aberdeen's prosperous industries. Special Corporation tramcars conveyed the visitors to the Rubislaw granite quarries in the northern part of the city, where a special blast was fired in their honour. From thence was an interesting run to the cutting and polishing works of the same firm, almost at the southermost point of the city, where the whole of the processes were well shown—cutting and chiselling tools operated by compressed air and patient ponderous polishing machinery, employing respectively small shot, emery, and felt. It was pleasant to think that on the evening previous the visitors had enjoyed something of the artistic perception of the late founder of this great business, the Macdonald collection being the better part of the Municipal Art Galleries. After the party had learnt all that they could about granite they went to the Bathing Station, where they had a good tea.

* * *

Aberdeen is so complete in itself as a sight that the visitor was not much concerned about visits to factories, but one local industry had not escaped the local committee's anticipatory perspective—the making of combs and other horn instruments. In 1885 the Aberdeen Comb Co., Ltd., opened its works to the B.P.C. and the British Association. In 1908 Mr. Giles and his colleagues approached the company with a view to an inspection of the most interesting processes whereby cows' horns are converted into prosaic dressing and other combs. The company well considered the matter, and finally compromised with a donation of five sovereigns to the local fund.

* * *

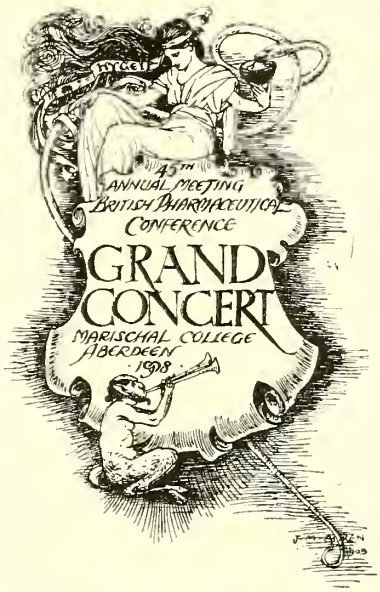
When Sir Edward Evans was walking through Marischal College with Mr. R. A. Robinson, that smart pharmaceutical camerist, Mr. Cleworth, of Manchester, approached and snapped them (see p. 451), neither of the subjects realising that they were giving a picturesque modern setting to the old Scot's song which has the refrain, "Let Whig an' Tory a' agree." The L.C.C. Chairman is an ardent Tory, and Sir Edward is sufficiently cautious as a leader of the Liberal party to take the other sobriquet without offence. Anyway the snapshot stands as evidence that politics do not interfere with pharmaceutical friendship.

* * *

"Tocher" is the Scot's word for a bride's dowry. It is, therefore, an easy deduction to say that the B.P.C. has had a triple dowry in Aberdeen this week, for the intellectual and oratorical prominence of Mr. J. F. Tocher, the President-elect, was flanked by the presence of his two brothers, Mr. R. Tocher, of Glasgow, and Mr. G. A. Tocher, of London, who also are pharmacists. In the final proceedings Mr. Maltby Clague appropriated this stroke of wit by saying 'mat a' the Scotch lassies that like may go to Newcastle next year and "tak' their ain Tocher wi' them."

* * *

Which brings these rambling remarks to the zenith of the Aberdeen effort in entertainment. The concert and dance at Marischal College on Tuesday evening make a record in B.P.C. sociality. This sketch, by Mr. Aiken, a local black-and-white artist, appeared on the surface of a programme that promised little out of the musical ordinary. We do not profess to explain why the God Pan's nose should recall the saying that a Jew can't live in Aberdeen. The programme as performed was a veritable profligacy of musical largess. Mr. David Anderson was, as the *C. & D.* has already said, responsible for the concert arrangements, and his musical



friends supported him so well that the evening was regarded as one of the most successful in the history of the Conference. It ought to be explained that before the concert Mr. and Mrs. Wright and Mr. and Mrs. Giles received the guests in the portrait gallery, which is the *entresol* to the Mitchell Hall. Thereafter all went down to the Debating Hall, where the concert was given. Mr. Warren T. Clemens, A.R.C.O., a noted local musician, who conducts choral societies, had an excellent orchestra of amateurs, and several vocalists also contributed.

* * *

The ladies had a fine carriage drive on Wednesday forenoon, this being the day's equivalent for the President's address the day before, as to which the fair sex was remarkably unanimous in praise. "Splendid," "Most interesting," and "Best I have heard" are samples of the feminine summation about it.

* * *

Wednesday evening's impromptu concert was clever enough for long prearrangement. Sir Edward Evans was the Chairman. From nine to twelve harmony with dash of recitation prevailed. The singers were Mrs. Edmund White, Miss Edith Clarke (Gravesend), Miss Ada Gibson (London), Miss Pirie (Aberdeen), Messrs. W. L. Currie, W. S. Glyn-Jones, A. Milne, W. T. Clemens, and Gilbert Simpson. There were recitations by Miss Hughes (Manchester) and Mr. A. C. Hinrichs (Parke, Davis & Co.), whose small Scotch deputation made everybody laugh, and Mr. W. Symons (Torquay). Midway during the evening the ladies retired to the drawing-room for tea. On returning the eternal servant question was presented in a character-sketch, wherein a registry-keeper (Mrs. Simpson) received a lady of advanced opinions (Mrs. Giles) wanting a servant. They interviewed successfully Miss Hay, Mrs. Ness, and Mrs. Leslie. The book was very clever, and the ladies too. The Chairman thanked all those who had contributed to the night's entertainment and Mr. Kidd (the accompanist). Mr. Hay thanked Sir Edward Evans, and Mr. Milne led off "For he's a jolly good fellow" in fine Scotch style. The finale was "Auld Lang Syne," Miss Ada Gibson leading.

* * *

Thursday's excursion took place in excellent weather, and everybody was delighted with the drive. Photographs were taken in the Royal Park. There were 220 persons at luncheon, Mr. Giles presiding. Mr. Peck proposed the toast of "The Ladies," and Mr. Robinson gave "The health of Mr. Giles." The whole proceedings were fraternal and successful.

"How did this happen?" growled the chemist, angrily surveying the trembling boy and the fragments of a pint glass measure. "Please, sir, I let it slip and——" "Well, my boy, outside *you* slip if it occurs again."

Trade Report.

NOTICE TO BUYERS.—The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers stock the goods. Qualities of drugs and oils vary greatly, and higher prices are commanded by selected qualities even in bulk quantities. It would be unreasonable for retail buyers to expect to get small quantities at anything like the prices here quoted.

42 Cannon Street, London, E.C., September 17.

THERE is no material improvement to report in trading conditions, the tone if anything being quieter than usual this week. Price-fluctuations are few, the most significant being an advance in quicksilver, which was not unexpected. Mercurials will probably follow on the next advance. Ammonia sulphate is weak and easier, and copper sulphate is offered at cheaper rates in Liverpool. Citric acid is firmer as a result of the new Sicilian export tax on raw material; large quantities of the citrate have been sold to makers recently, but business in citric acid is extremely slow. Persian opium is higher as the result of Japanese buying, and in Turkey the market keeps firm. Other changes in drugs include a decline in Canada balsam, and new foreign taraxacum. Chamomiles are steady at the decline. Carnauba wax is easier on spot. Cascara sagrada is firm, and honey is in demand. In essential oils prices of English peppermint show an advancing tendency owing to poor crop and yield of oil; on the other hand American H.G.H. is easier, as new supplies are arriving. Wayne County tin oil is steady. Cassia oil is steady on the spot, but arrival prices are weaker. Changes in fixed oils include an advance in coconut and palm, and a decline in turpentine. Castor is steady. Among spices, chillies and cloves are higher. Jamaica ginger is easier. The fluctuations of the week are as follows :

Higher	Firmer	Easier	Lower
Chillies	Citric acid	Canada balsam	Ammonia sulphate
Coconut oil	Clove oil	Carnauba wax	Turpentine
Galls	Opium (Persian)	Cotton-seed oil	
Palm oil		Ginger (Jamaica)	
Peppermint oil (English)		Peppermint oil (H.G.H.)	
Quicksilver		Taraxacum	

Cablegram.

New York, September 17 :—Business in drugs is moderate. Opium is weak at $4.90 per lb. for druggists' by single cases, a reduction of 10c. Peppermint oil is dull at $1.45 for Wayne County in tins. Hydrastis (golden seal) is firm at $2. Copaiba is lower at 42c. per lb. for Central and South American, and 60c. for Para. Cascara sagrada is nominal at 9½c. per lb., and senega is slow at 34c. per lb.

Heavy Chemicals.

There is a very fair general demand being experienced in the heavy-chemical market for both main and miscellaneous products, and the tone of the market keeps very steady. A somewhat improved request is apparent against existing contracts, and more serious attention is now being given to the purchase of next year's requirements. Values are, on the whole, well maintained at late rates.

Sulphate of Ammonia.—The tone of this market is somewhat weaker, and late values have scarcely been maintained. The demand, on the whole, has been fairly good, but heavier supplies are coming into the market, with the effect already mentioned. Forward business is neglected. Present nearest values: Beckton September-December 11*l.* 17*s.* 6*d.*, Beckton terms 11*l.* 5*s.*, London 11*l.* 5*s.*, Leith 11*l.* 8*s.* 9*d.* to 11*l.* 10*s.*, with January-June delivery 12*l.* to 12*l.* 5*s.*, Hull 11*l.* 5*s.*

Benzols are decidedly on the weak side just at present, with ruling quotations at from 6½*d.* to 7¼*d.* per gal. for 90 per cent. and from 6¾*d.* to 7¼*d.* per gal. for 50 per cent.

Alumina Products keep generally in good request, especially on contract account. Values are very steady and tend upwards rather than otherwise. Crystal alum lump 5*l.* 2*s.* 6*d.* to 5*l.* 12*s.* 6*d.*, lump in tierces 5*l.* 7*s.* 6*d.* to 5*l.* 17*s.* 6*d.*, and ground in bags 5*l.* 12*s.* 6*d.* to 6*l.* 2*s.* 6*d.* per ton on rails, Lancashire and Yorkshire, or f.o.b. Hull, Goole, or Liverpool. Sulphate of alumina, purest qualities, and practically free of iron, ordinary strength 4*l.* 12*s.* 6*d.* to 5*l.* 2*s.* 6*d.* per ton, delivered in usual casks with customary extras for similar pure quality in higher concentrations and usual allowances for bags and loose slabs. Aluminous cake 52*s.* 6*d* to 60*s.* per ton, alumino-ferric 52*s.* 6*d.* to 60*s.* per ton, according to quality, quantity, and condition. Hydrate of alumina, purest quality and high strength, Al_2O_3, 12*l.* 10*s.* to 13*l.* 10*s.* per ton, free on rails, in large casks. Special pulp hydrate of alumina 15*s.* to 17*s.* 6*d.* per cwt. c.i.f. Special pulp quality, dried and in lumps, 37*s.* 6*d.* to 40*s.* per cwt. c.i.f., and ground 38*s.* to 40*s.* 6*d.* per cwt. c.i.f. Aluminate of soda, purest quality and high strength Al_2O_3 32*s.* 6*d.* to 35*s.* per cwt. Carbonate of alumina 35*s.* to 37*s.* 6*d.* per cwt.

Manchester Chemical-market.

Manchester, September 15.

There is a continuance of the steady feeling in heavy chemicals already noted. Contract prices for bleaching powder have been fixed rather later than is usually the case, and show an advance on last year of about 5*s.* to 7*s.* 6*d.* per ton. Drysalteries show little change, pot and pearl ash being very firm. Coal-tar products are on the easy side. Sulphate of copper is 10*s.* per ton lower for prompt delivery, but owing to the position of the metal makers show no anxiety as to far-forward delivery, and for this position they do not make any concessions. Cream of tartar and acids unchanged. Ammonia muriate, 24*l.* per ton; sulphate of ammonia, 11*l.* 2*s.* 6*d.* to 11*l.* 5*s.* per ton, on rails Manchester. Acids: arsenic, 2,000°, 26*s.* 6*d.*; glacial acetic, 35*s.* to 37*s.* 6*d.* per cwt.; sulphuric, free from arsenic, 145°, 36*s.* per ton. Aniline oil, 5½*d.*; salts, 5*d.* per lb. Chloride of barium (refined crystals), 7*l.* 10*s.* per ton. Barytes (refined white), 32*s.* 6*d.* to 35*s.*; grey, 35*s.* to 37*s.* 6*d.* per ton. Carbolic acid, 39° to 40° crystals, 4¾*d.*; 34° to 35°, 4½*d.* per lb.; crude 60's, East Coast, 1*s.* 2½*d.* to 1*s.* 3*d.*; West Coast, 1*s.* 2*d.* to 1*s.* 2½*d.* Carbide of calcium (for acetylene gas manufacture), 12*l.* to 14*l.* 10*s.* per ton; sulphite of iron (green copperas), 45*s.* to 47*s.* 6*d.*, f.o.b. Manchester Ship Canal. Bleaching powder, 4*l.* 5*s.* to 4*l.* 10*s.* per ton, softwood casks on rails at works. Glycerin (chemically pure tins and cases), 65*l.*; 5-cwt. drums, 61*l.* per ton. Foreign white sugar of lead, 23*l.* 7*s.* 6*d.*; brown, 19*l.* 10*s.*; nitrate, 24*l.*; acetate, 24*l.* per ton. Methylated spirit (61 o.p.), 1*s.* 8*d.* per gal. Naphthalene, 4*l.* 10*s.* to 8*l.* 10*s.*; salts, 35*s.* to 37*s.* 6*d.* per ton. Manganese, 94 per cent., 30*l.*; 80 to 85 per cent., 7*l.*; 70 per cent., 6*l.* 15*s.*; 60 per cent., 5*l.* 15*s.* per ton. Potash, carbonate, 90 per cent., 17*l.* 10*s.*; caustic, 87 to 90 per cent., 23*l.* 10*s.* per ton; chlorate, 3½*d.* per lb. Glauber salts, 42*s.* 6*d.*, f.o.r. Sulphate of magnesia (Epsom salts), 60*s.* per ton bags, and 70*s.* to 85*s.* per ton, casks and barrels (export), according to quality. Cyanide of potassium, 8¾*d.* per lb. Verdigris (English), 9*d.* per lb. White powdered arsenic, 17*l.* 10*s.* per ton. Sulphate of copper, 22*l.* to 22*l.* 10*s.* per ton, best brands, delivered Manchester. Sub-oxide of copper (commercial powder), black, 10¾*d.*; red, 11*d.* per lb. Acetate of soda, 16*l.* 15*s.* Brown acetate of lime, 6*l.* 7*s.* 6*d.* Yellow prussiate of potash, 4¾*d.* to 5*d.* per lb.

American Drug-market.

New York, September 7.

Business in the New York drug-market continues of meagre proportions. The close of an unusually light summer's trading has not been followed by omens of any increased activity during the early fall months. Prices are fairly steady, and only a few changes have occurred. Opium is lower, as are spearmint oil and guarana. Cascara is very firm. Hydrastis and peppermint oil are fairly steady.

Canada Balsam.—The local stock is extremely small, and offers from primary sources are practically in abeyance. Demand, however, is correspondingly inactive at the prevailing prices, and holders now offer at $5.75 per gal., a reduction of 25c.

Cascara Sagrada.—Despatches from the coast all tell the same story—viz. that the peel this year has been particularly poor, induced by the slump in values last winter. Local holders are accordingly firm in their views, and nothing under 9c. can be done, while 9½c. is the commoner quotation for old bark. This season's peel is said to be available at 7½c. f.o.b. coast, but the market generally is still in an undeveloped state.

Copaiba is in moderate demand for the C. and S. American varieties, and an easy tone prevails: 45c. to 50c. is the usual

range for grades reasonably pure. Para is lower at 60c., with some business reported at that figure.

GUARANA.—Owing to competition among the different holders, prices have dropped down $1 to $2.50, but little business is passing at the decline.

HYDRASTIS.—Primary markets continue firm owing to limited supplies, but spot demand is not brisk, and prices are just steady at $2 to $2.10 for fall-dug. Spring root is not asked for to any important extent, and $1.85 and $1.95 will buy according to grade.

JALAP is scarce and firm at 21c. for U.S.P. drug.

OPIUM.—Only sufficient is being taken to cover immediate requirements, and the market has a very tame appearance, with prices decidedly easy at the recent decline to $5 for case and broken parcels. Owing to active legislation regulating its use, the American demand for this drug is on the wane, and will continue so until surreptitious channels of consumption are more efficiently established.

PEPPERMINT OIL (American).—The situation with respect to new oil is unchanged, the progress of distillation having proved fairly accurate previous forecasts of the crop. Spot prices are steady at $1.45 to $1.55, and no marked departures from these figures (either way) is expected in the near future. Large purchases of new oil have been made by local dealers, but the prices did not transpire.

SENEGA (Western).—The supply is still greatly in excess of present needs, and a further reduction to 35c. has been made.

SPEARMINT OIL continues in declining tendency under the influences noted in an earlier report, and $3 is a merely nominal quotation.

TONKA.—All varieties are scarce: Angostura are very firm at $1.50 to $1.60, and Para is higher at 30c. to 35c. per lb.

Haarlem Colonial Museum.

The Haarlem Colonial Museum is much in evidence in London this week; it is in large measure responsible for the exhibit of Java products at the Agricultural Hall in connection with the Confectioners' Exhibition (reference to which was made in our last issue), and for the excellent exhibit of rubbers at Olympia produced in Dutch Colonies. Its amiable and talented director, Dr. Greshoff, is also in town on a short visit, mainly to see the rubber exhibition, so that a note on the fortieth number of the Museum Bulletin is of topical interest. The Haarlem institution was the first of the Colonial museums, and was founded twenty-three years ago. Its chief activities are the maintenance of (1) a museum of Dutch Colonial produce, (2) a laboratory for phytochemical work, (3) a library of literature relating to economic products, (4) a bureau for dealing with inquiries, (5) a sample room of specially interesting materials at the Amsterdam Commercial Museum, where Dr. Greshoff also attends on Wednesdays to answer inquiries. This number of the Bulletin is essentially a review of the work done during 1907, and shows that the museum is very active in all the directions indicated. It was visited in 1907 by 6,714 persons, among them being Dr. Braun, of Amani, in German East Africa, Professor Kremers, of Wisconsin, and Dr. Power, of the Wellcome Research Laboratories. The institution also took part in providing or arranging exhibits in a number of exhibitions held in Holland and elsewhere, *e.g.*, the South African Exhibition transferred from London to Amsterdam, and the Oceanography Section of the Marseilles Exhibition. The Haarlem laboratory is well known as a centre of work on the occurrence of prussic acid in plants, and the latest addition to plants of this type is the common bracken fern. Quite a number of subjects of pharmaceutical interest are dealt with in the year's publications—*e.g.* analyses of coca leaves, preparation of Peruvian balsam in Java, turpentine substitutes, Indian drugs, dragon's blood, determinations of ecgonine in Java coca, and so on. Among the new products shown at Amsterdam during the year were a new East Indian wood oil, coffee oil prepared from the unroasted seeds, shea butter and seeds, the anti-opium plant (*Combretum sundaicum*), *Coffea humilis*, a new tropical African coffee, the seeds of which contain 1.5 per cent. of caffeine, adulterated star-anise, and the leaves of *Liatris odoratissima*, which have a strong odour of cumarin. Samples of the inquiries received and of the information supplied thereto are given, and show that these range over a great variety of subjects, and that they are dealt with in a thoroughly practical fashion.

ACID, CITRIC.—Although only a small business is being done, there appears to be no foreign now available under 1*s.* 3¼*d.* to 1*s.* 3½*d.*, while 1*s.* 4*d.* continues to be English makers' price. The new Sicilian law imposing an export duty on citrate of lime and concentrated juice sold outside the "Camera" was to have come into force this week (September 15), but nobody appears to know whether it is in operation yet. Within the past few weeks there has been a large amount of quiet buying in citrate of lime on the part of makers, who, it is said, have covered their requirements for several months ahead at prices up to 18*l.* 10*s.*, thus obviating their having recourse to the Camera Agrumaria for some time. When the cheaper raw material is exhausted, the price of citric acid is expected to advance in proportion to the export duty, which is equivalent to 2¾*d.* per lb.

ALOES.—Sixty cases Cape have arrived from Mossel Bay.

ARROWROOT.—At auction 783 barrels St. Vincent offered were bought in at 2⅛*d.* to 2¼*d.* per lb.

ASAFETIDA.—Several tons have been sold this week for export at from 60*s.* to 65*s.* per cwt. for good medium qualities; there is also an inquiry for fine almonds, but they are non-existent; the value would be about 100*s.* to 110*s.* About 250 packages (partly new) Persian Gulf will be offered next week.

BUCHU.—Fifteen packages have arrived from Cape Town. Since the auction the remainder of the offerings of good green round have been cleared.

CAPSICUMS.—Steady; at auction 30 bags fine large red Nyasaland sold at 60*s.*, and fine medium picked at 58*s.*

CASCARA SAGRADA is very firm at from 42*s.* 6*d.* to 45*s.* per cwt. spot, with few sellers at the inside figure, and for shipment 42*s.* 6*d.* is still quoted. It is stated that the equivalent of 41*s.* c.i.f. has been refused in New York several times.

CHAMOMILES.—It is not anticipated that prices will go any lower now that the crop is almost at an end: 48*s.* per cwt. c.i.f. appears to be about the price for best Belgian. Judging from the imports into London and other ports, the lower range of prices this season has led to a larger volume of business.

CHILLIES are dearer. At auction 61 bags fair to good bright Nyasaland sold at 54*s.* to 57*s.* per cwt., ordinary to fair Mombasa were bought in at 30*s.* to 35*s.*, and fine red Japanese at 50*s.* per cwt.

CINCHONA.—At auction on Tuesday the small supply of 173 bags Ceylon and 80 bales Java were offered and sold at steady prices, the average unit being unchanged at ⅝*d.* per lb., the following prices being paid: Ceylon, Succisubra, broken quill and chips, 2½*d.*, and Java, Ledgeriana branch, 3⅜*d.*; root, ditto, 3⅛*d.*; and hybrid chips, 2¾*d.* The following were the buyers: Messrs. Howards & Sons, Ltd., 11,760 lb.; the Brunswick factory, 6,540 lb.; and druggists', 5,520 lb. At the next Amsterdam auction on October 1 the smaller supply of 7,911 packages will be offered, weighing 711,935 kilos. The shipments from Java during the first half of September amounted to 632,000 Amst. lb., against 629,000 Amst. lb. last year and 951,000 Amst. lb. in 1906.

CINNAMON.—At auction 100 bags chips sold at from 2¼*d.* to 2⅜*d.* for dullish mixed small; quillings were bought in at 5½*d.*

CLOVES.—At auction 13 cases good picked Penang were bought in at 11*d.* per lb. On the spot small sales of fair Zanzibar have been made at 4½*d.* to 5⅛*d.* per lb., being dearer. Early in the week prices for delivery were higher, sales comprising October-December at 5⅛*d.* to 5$\frac{5}{32}$*d.*, January-March at 5¼*d.* to 5$\frac{5}{16}$*d.*, and to arrive January-March at 5⅛*d.* to 5$\frac{3}{16}$*d.*; but on Wednesday the tone was easier at the close, with sellers of January-March delivery at 5¼*d.*, and January-March shipment at 5⅛*d.* c.i.f.

COCA-LEAVES.—At the Amsterdam auction, to be held on October 1, 99 packages Java will be offered, weighing 5,550 kilos.

COPPER SULPHATE.—In Liverpool prices have declined by 5*s.* to 19*l.* 10*s.* per ton for September-December delivery, and for January-February delivery 20*l.* is asked; the spot quotation is 20*l.* 5*s.* to 20*l.* 10*s.*

GALLS.—Persian are about 5*s.* per cwt. higher, there being no sellers of blue under 67*s.* 6*d.* spot, and for arrival there are buyers at 62*s.* 6*d.* c.i.f. The crop has turned out very small.

GAMBIER.—Small sales of *Cubes* have been made at 33*s.* per cwt. on the spot.

GAMBOGE.—Small sales of good Siam pipe have been made at 15*l.* 15*s.* per cwt.

GINGER.—At auction the moderate supply of 215 barrels and 26 bags were offered, of which about 60 sold mostly

without reserve at easier rates, including ordinary at 47*s.* to 48*s.*, and common dark at 45*s.* per cwt.; good limed Japan was bought in at 29*s.* No Cochin or Calicut was offered.

Gum Arabic is steady, good pale sifted Soudan being quoted up to 55*s* per cwt., and for amber to palish half-hard sorts 34*s.* to 36*s.* per cwt. is quoted. Aden gum continues scarce, and Senegal (Bas de Fleuve) is steady at 31*s.* to 31*s.* 6*d.* per cwt. f.o.b. Bordeaux.

Menthol.—Kobayashi is being sold in small lots at 7*s.* 1½*d.* spot, Suzuki at 7*s.*, and Yazawa 6*s.* 10½*d.*; to arrive 7*s.* 1½*d.* is quoted for the first-named brand.

Mercurials.—No alteration has been made in mercurials, but should quicksilver advance another 2*s.* 6*d.* then a penny per lb. rise in murcurials would be almost inevitable. Makers quote corrosive sublimate at 2*s.* 5½*d.*, white precipitate at 3*s.* 1*d.*, red precipitate at 3*s.* 0½*d.*, and calomel at 2*s.* 9½*d.* per lb. for up to 2 cwt. lots.

Oil, Aniseed, Star.—On the spot 4*s.* 6*d.* per lb. is quoted, and for shipment the price is 4*s.* 3*d.* c.i.f.

Oil, Cananga.—Java to arrive is quoted 8*s.* 9*d.* per lb. c.i.f. London.

Oil, Cassia, is firm on the spot at 5*s.* per lb. for 80 to 85 per cent. c.a., and at 4*s.* 8*d.* for 70 per cent. to 75 per cent. c.a.

Oil, Castor.—Hull make is quoted 25*l.* 15*s.* for pharmaceutical quality, and 23*l.* 5*s.* per ton. for first pressing in barrels for prompt delivery; and for October-December the quotations are 26*l.* and 23*l.* 10*s.* respectively, delivery free ex wharf London; cases 50*s.* per ton extra. In Liverpool the spot price of good seconds Calcutta is 2⅞*d.*, and first pressing French 3 1/16*d.* per lb.

Oil, Citronella.—Java oil to come forward is offered at 2*s.* 1*d.* per lb. c.i.f. London, and for Ceylon 1*s.* 1*d.* is quoted for drums and 1*s.* for cases.

Oil, Clove.—Owing to the advance in cloves, the higher price of 3*s.* 2*d.* is now asked.

Oil, Cod-liver.—Our Bergen correspondent writes on September 14 that there is still a small demand for non-congealing Lofoten oil at the equivalent of 53*s.* per barrel f.o.b. Bergen, but holders hope for higher prices and are not disposed to sell at present. The exports from Bergen up to date amount to 13,923 barrels, against 8,592 barrels at the corresponding date of 1907.

Oil, Lemongrass, is steady on the spot, at from 1⅞*d.* to 2½*d.* per oz. as to citral contents.

Oil, Peppermint.—The crop of English oil of peppermint has turned out poor both as regards the quality and the yield therefrom. Distillers are therefore asking higher rates—namely, 33*s.* to 35*s.* per lb. A fair quantity of American H.G.H. is now on the way, and when available there is a possibility of prices being about 1½*d.* cheaper, say 10*s.* 7½*d.* London terms. This week small sales have been made at 7*s.* 9*d.*, and for Wayne County 6*s.* 4½*d.* has been paid.

Oils, Fixed.—Lagos *Palm* is 6*d.* per cwt. dearer at 27*s.* 9*d.* per cwt. *Cottonseed* is easier at 20*s.* 9*d.* spot, for crude, 22*s.* for ordinary refined, and 25*s.* for sweet refined. *Rape* is quiet at 30*s.* for ordinary brown, and 32*s.* for English refined in casks. *Coconut* is dearer at 27*s.* for Ceylon, and at 36*s.* for Cochin on the spot. *Turpentine* is lower at 26*s.* 9*d.* for American, and *Petroleum* is steady at 6¼*d.* to 6⅜*d.* for Russian, 6¾*d.* to 6⅞*d.* for ordinary American, and 7¾*d.* to 7⅞*d.* for water-white.

Opium.—The recent arrivals of Persian opium on the London market, amounting in all to about 250 cases, are well held. It is stated that the Japanese have been large buyers of Persian on the Hong Kong market, their purchases amounting to several hundred cases. They are also endeavouring to buy in London, but have only secured some 30 cases at 11*s.* 6*d.* for about 9 per cent., but for opium testing about 10 per cent., which is scarce, 12*s.* 6*d.* has been paid in other quarters. There appears to be nothing doing for shipment, there being offers of Persian at 12*s.* 9*d.*, with buyers at 12*s.* 6*d.* A small business has been done in the Turkey drug at about steady prices. A Smyrna correspondent writes on September 5 that the market is firm in spite of the small business. The sales amount to 8 cases, similar in quality and price to those sold last week. The market closed firm with buyers, and the arrivals amount to 1,438 cases, against 1,146 cases last year on the same date. Another Smyrna correspondent, writing on September 11, states that the sales this week amount to 21 cases in small lots. The bankers, who made advances to weak holders, forced this week's business as sellers were not anxious. Market closes firm with an upward tendency. The arrivals in Smyrna to date amount to 1,595 cases, against 1,160 cases.

Pepper.—At auction 71 bags Singapore were bought in at 3½*d.* for fair, and 9 bags Ceylon sold at 3⅜*d.* for fine heavy. Privately the market for Singapore is steady, with moderate spot sales at 3 1/16*d.* for fair; for arrival the sales include 25 tons October-November shipment at 2 13/16*d.* c.i.f. Of *White Pepper* 10 bags Ceylon were offered and bought in at auction. Privately fair Singapore is quoted 4⅞*d.* to 5*d.*, and fair Penang sellers at 4½*d.* on the spot. For arrival the market is easier, the sales comprising 40 tons Singapore September-October and October-November shipments at 4⅛*d.* c.i.f. d/w.

Pimento.—Quiet in auction; 21 bags fair were bought in at 2¼*d.* per lb.

Platinum.—The Russian Minister of Finance is about to present a Bill to the Duma for the establishment of a State monopoly in platinum. If this project is fulfilled a rise in platinum may be anticipated.

Quicksilver.—On Monday the importers advanced their price by 2*s.* 6*d.* per bottle to 8*l.* 5*s.*, and in seconds 8*l.* 4*s.* is quoted.

Quinine is unaltered, with sellers of German sulphate from second-hands at 7½*d.* per oz., makers quoting 8*d.*, which price has been in vogue since the end of January. Some 50,000 oz. Java sulphate has recently arrived on this market, the spot price of which is 6½*d.* per oz.

Rhubarb.—Seventeen cases have arrived *viâ* Marseilles.

Saffron.—The outturn of the new Spanish crop greatly depends upon the weather during the next fortnight; up to now it has suffered somewhat from drought, rain being badly wanted; from 31*s.* 6*d.* to 32*s.* 6*d.* net is quoted for B.P. qualities.

Santonin is steady and unaltered at from 9*s.* to 10*s.* per lb. according to quantity, the lower price applying to 2-cwt. lots in one delivery.

Shellac.—There is no material alteration in the spot price this week, moderate sales of fair TN orange selling on the basis of 106*s.* per cwt. Good and fine orange marks are quoted at from 135*s.* to 150*s.* per cwt. AC Garnet is 107*s.* 6*d.* spot and 105*s.* c.i.f. GAL in circle 92*s.* 6*d.* spot. The market for futures closed last week with a quiet feeling. October 102*s.*, December 104*s.*, March 108*s.*, since when values have not materially altered, business having been difficult.

Taraxacum.—New foreign is being offered at from 36*s.* to 40*s.* per cwt. c.i.f. London, but English appears to be offered at rather under these figures.

Thymol is offered at 6*s.* 6*d.* per lb. in 28-lb. tins.

Turmeric.—Madras finger is steady at from 20*s.* to 22*s.* per cwt. for fair to good finger, and of Bengal small sales have been made at 19*s.* on the spot. Split Cochin bulbs sell at 13*s.* per cwt.

Wax, Carnauba, is rather easier with sales of yellow at 102*s.* 6*d.* and waxy grey at 90*s.* per cwt. spot.

Wax, Japanese, sells at 52*s.* 6*d.* per cwt. on the spot, and at 48*s.* c.i.f. for September-October shipment.

Wood Oil.—Hankow is quiet at 29*s.* per cwt. on the spot, and at 26*s.* 6*d.* c.i.f. for October-November shipment.

Mr. H. W. Bygott, chemist and druggist, who has been in Uganda for three years as a Government dispenser, is spending a holiday in this country.

Mr. R. L. Gifford, Ph.C., a visitor from the Blackburn Education Committee to St. Thomas's Church Evening Classes, presided over the annual prize-distribution on September 11.

Mr. J. C. McCorquodale, chemist and druggist, High Street, Markinch, Fife, was last week re-elected Secretary of the Markinch Musical Association.